MHC-900

SERVICE MANUAL

6497

AEP Model

These systems are composed of following models.
As for the service manual, it is issued for each component model, then please refer to it.

COMPONENT MODEL NAME FOR THESE SYSTEM

MHC-900	
TUNER, DECK, CD, AMPLIFIER	HCD-H900
SPEAKER SYSTEM	SS-H900

+ 6480

+ 6492

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

PARTS LIST

Part No.	Description	Remarks
1-501-374-11	ANTENNA, LOOP	
1-501-594-11	ANTENNA (FM)	
1-575-495-11	CORD, SPEAKER	
3-755-073-16	MANUAL, INSTRUCTION (AEP) (English, French, Spanish, Chinese, Dutch)	
3-755-073-41	MANUAL, INSTRUCTION (German, Swedish, Portuguese, Italian)	
*4-956-715-01	INDIVIDUAL CARTON	
1-693-057-11	COMMANDER, STANDARD (RM-S150) (HCD-H900)	
*4-954-064-01	CUSHION (SS-H900)	
*4-954-955-01	CUSHION, LOWER (HCD-H900)	
*4-954-956-01	CUSHION, UPPER (HCD-H900)	

COMPACT HI-DENSITY COMPONENT SYSTEM

SONY®

MICROFILM

Sony Corporation
Audio Group

English
92L0950-1
Printed in Japan
© 1992. 12
Published by Audio Corporate Planning Group

6497

HCD-H900

SERVICE MANUAL

AEP Model

HCD-H900 is the tuner, deck, CD and amplifier section in MHC-900

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ᗡD are trademarks of Dolby Laboratories Licensing Corporation.

CD Section	Model Name Using Similar Mechanism		HCD-H170/H170K/H700
	CD Mechanism Name		CDM13B-5BD4A
	Base Unit Name		BU-5BD4A
Tape deck Section	Model Name Using Similar Mechanism		HCD-H170/H170K/H700
	Tape Transport Mechanism Type	DECK A	TCM-190RA12A
		DECK B	TCM-190RB22A

SPECIFICATIONS

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range 87.5 — 108 MHz
Antenna FM lead antenna
Antenna terminals
75 ohm unbalanced
Intermediate frequency
10.7 MHz

AM tuner section

Tuning range
MW: 531 - 1602kHz
(AEP,Germany Model)
522 - 1611kHz
(Italian Model)
LW: 153-279kHz
(AEP,Germany Model)
144-288kHz
(Italian Model)
Antenna AM loop antenna
External antenna terminals
Intermediate frequency
450 kHz

Compact disc player section

System Compact disc digital audio system
Laser Semiconductor laser
($\lambda = 780$ nm)
Emission duration: Continuous
Laser output Max. 44.6 μW*
* This output is the value measured at distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.
Signal-to noise ratio More than 95 dB
Dynamic range More than 90 dB

Cassette deck section

Recording system
4-track 2-channel stereo
Frequency response
(DOLBY NR OFF)
60 — 13,000 Hz (±3 dB), using TYPE I cassette (Sony HF-S)
60 — 14,000 Hz (±3 dB), using TYPE II cassette
Wow and flutter
0.1% WRMS ±0.3% (DIN)

Amplifier section

Continuous RMS power output
85 + 85 watts (6 ohms at 1 kHz, 5% THD)
Peak music power output
1000 watts

Inputs
MIX MIC (minijack): Sensitivity 1 mV, impedance 600 ohms
VIDEO/AUX (phono jack): sensitivity 5 mV, impedance 47 kilohms
Outputs
HEADPHONES (stereo minijack): accept headphones of 8 ohms or more.
SPEAKERS: accept impedance of 6 to 16 ohms.

—Continued on page2—

MICROFILM

COMPACT HI-DENSITY COMPONENT SYSTEM

SONY®

General

Power requirements 120V, 220V, 240V AC,
adjustable, 50/60Hz

Power consumption 160watts

Dimensions
Approx. 255 X 285 X 283mm
(w/h/d)
(8 7/8 x 11 1/4 x 11 1/4 inches)

Weight
Approx. 7.7 kg (17 lb)

Accessories supplied
- AM loop antenna (1)
- Remote commander (1)
- Sony SUM-3 (NS) batteries (2)
- FM lead antenna (1)
- Speaker cords (2)

Design and specifications subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

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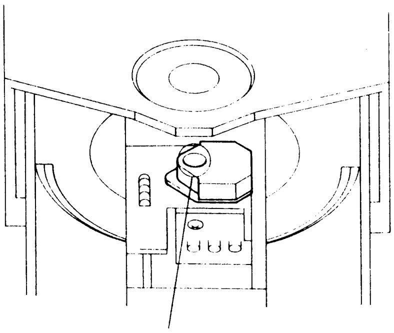
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1
SERVICING NOTES

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

1. Make POWER switch on with no disc inserted and disc table closed.
2. Confirm that the following operation is performed while observing the objecting lens.



❶ Confirm that laser beam is spread.

❷ Up and down motion of the objective lens. (3 times)

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

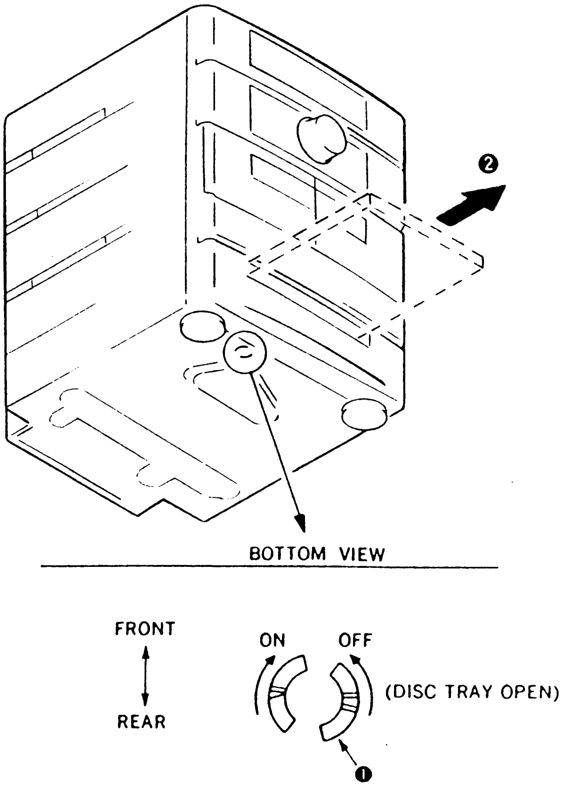
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF



(1) Insert to ❶ for tapering driver, etc., and turn in the direction of arrow OFF. (Disc tray open)

(2) Tray as come out little of front panel, pull out in the direction of arrow ❷ by hand.

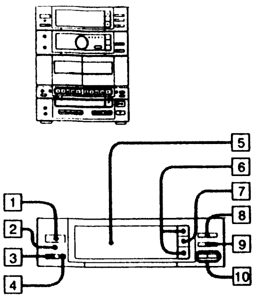
SECTION 2
GENERAL

This section is extracted from instruction manual.

Parts Identification

Refer to the pages indicated in parenthesis for use of the buttons.

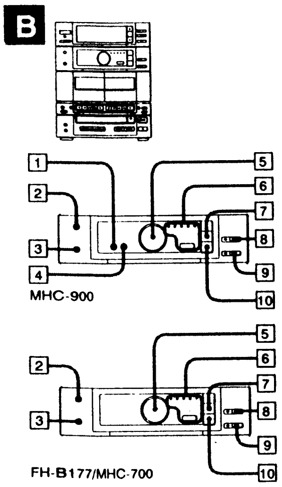
A



Tuner Section A

1. POWER ON/STANDBY switch
2. Remote sensor
3. TIMER button (98)
4. TIMER REC button (102)
5. Display window
6. PRESET/TIMER +/– buttons (50, 98, 102)
7. BAND button (46)
8. MEMORY/NEXT button (50, 98, 102)
9. STEREO/MONO button (48)
10. TUNING +/– buttons (46)

B



MHC-900

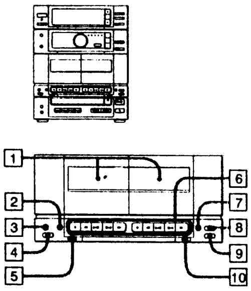
FH-B177/MHC-700

Amplifier Section B

1. DBFB control (20)
2. MIX MIC jack (for other models) (110)
3. HEADPHONES jack (20)
4. BALANCE control
5. VOLUME control (20)
6. PRESET button and indicators (60)
7. FUNCTION button
8. DBFB (Dynamic Bass Feed Back) button and indicator (20)
9. S-SUR (simulated surround) button (20)
10. EQ (equalizer ON/OFF) button (60)

Parts Identification

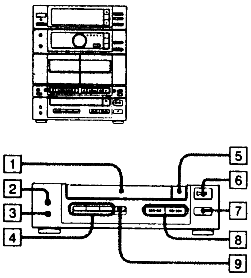
C



Cassette Deck Section C

1. Cassette holders
2. HIGH SPEED button (70)
3. CD SYNC button (84, 92, 96)
4. EJECT ▲ button (for deck A) (54)
5. DIRECTION MODE selector (54)
6. Tape operating buttons (for deck A and B)
   - ▶▶ (fast wind and AMS*) button (54)
   - ◀◀ (rewind and AMS*) button (54)
   - ▷: Forward play button and direciton indicator (54)
   - ◁: Reverse play button and direction indicator (54)
   - ■: Stop button (54)
7. REC ● (recording) button
8. PAUSE ❙❙ button (54)
9. EJECT ▲ button (for deck B) (66)
10. DOLBY NR selector (54)

D



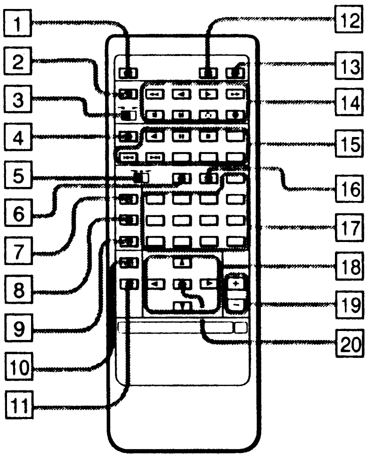
CD Player Section D

1. Disc tray (22)
2. CHECK button (40)
3. EDIT/TIME FADE button (76, 88)
4. PLAY MODE buttons
   CONTINUE button (36)
   SHUFFLE button (36)
   PROGRAM button (38, 94)
5. ≙ OPEN/CLOSE button (22)
6. ▷❙❙ (play/pause) button (22)
7. ■ (stop) button (22)
8. ⏮◀◀/▶▶⏭ (manual search/AMS*) buttons (24, 94)
9. REPEAT button (30)

* AMS is the abbreviation of Automatic Music Sensor.

Parts Identification

E



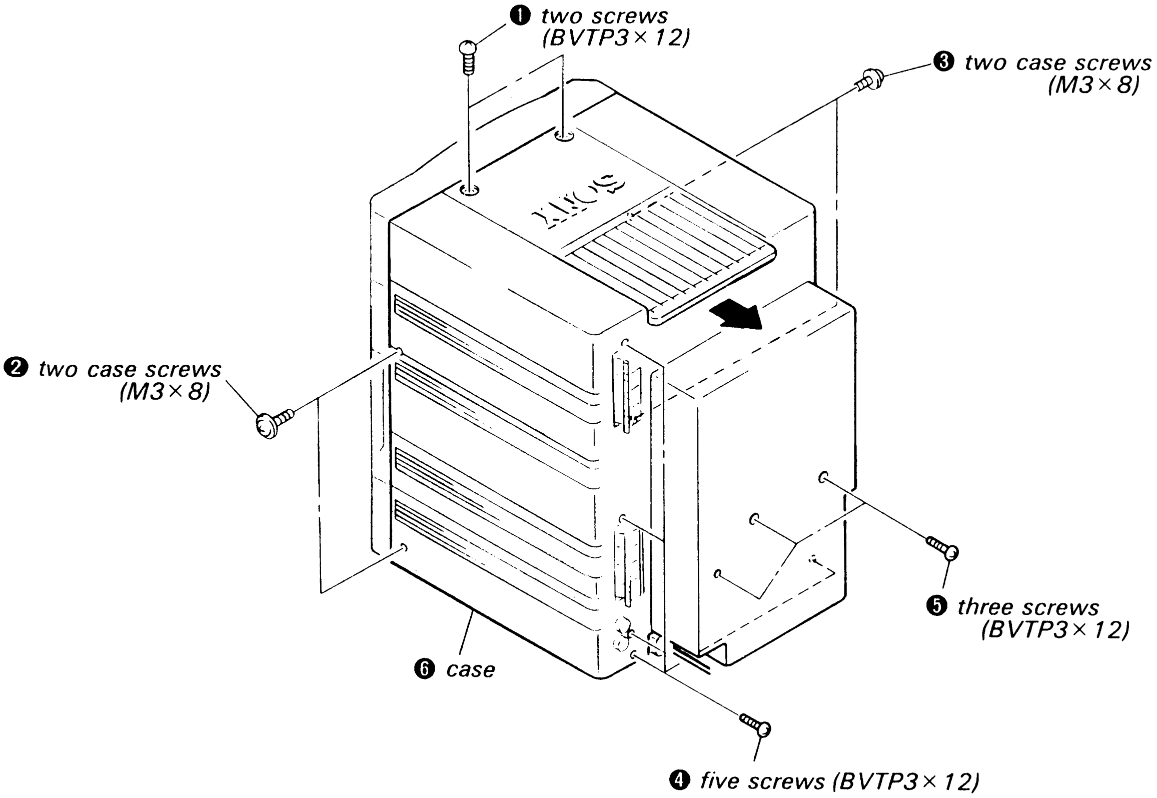
Remote Commander E

1 CLOCK DISPLAY button (18)
2 TAPE function button
3 DECK A/B selector
4 CD function button
5 TUNER/EQ/CD selector
6 CHECK button (40)
7 TUNER function button
8 VIDEO function button
9 PHONO function button
10 MEMORY button (64)
11 DBFB button (20)
12 SLEEP button (108)
13 SYSTEM POWER button
14 Tape operating buttons
15 CD player operating buttons
16 CLEAR button (36)
17 TUNER/EQ/CD numeric buttons (26, 60)
18 CURSOR CONTROL buttons (62)
19 VOL +/- (volume control) buttons (20)
20 EQ button (60)

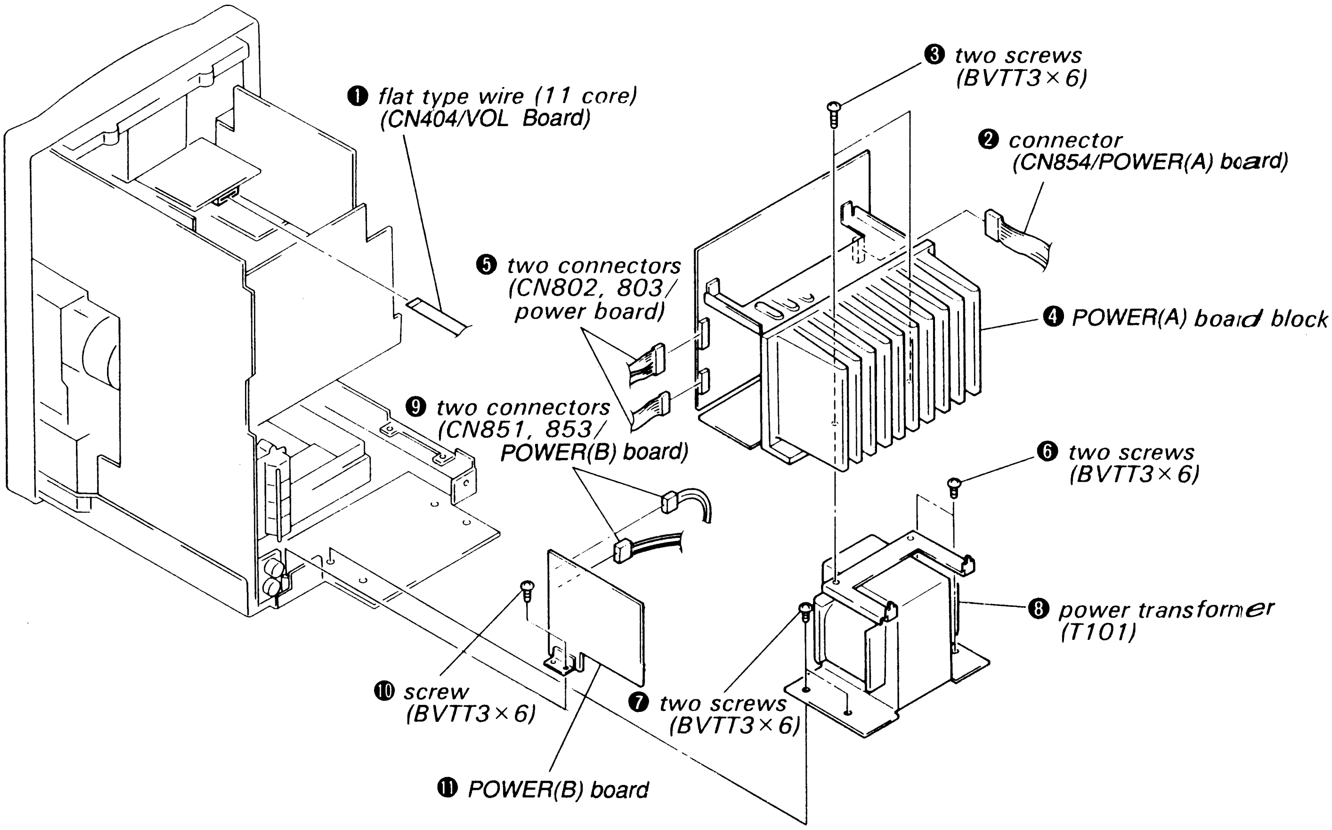
SECTION 3
DISASSEMBLY

NOTE: Follow the disassembly procedure in the numerical order given.

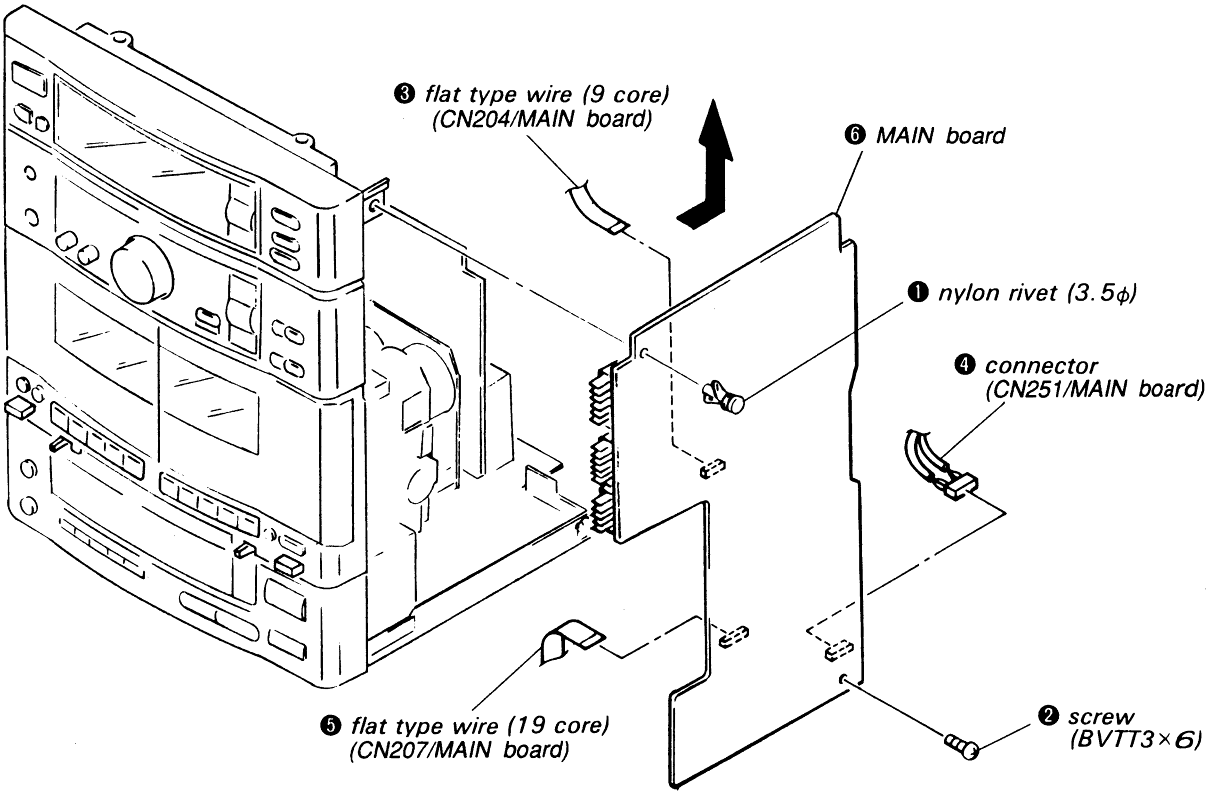
3-1. CASE REMOVAL


❶ two screws (BVTP3 × 12)
❸ two case screws (M3 × 8)
❷ two case screws (M3 × 8)
❺ three screws (BVTP3 × 12)
❻ case
❹ five screws (BVTP3 × 12)

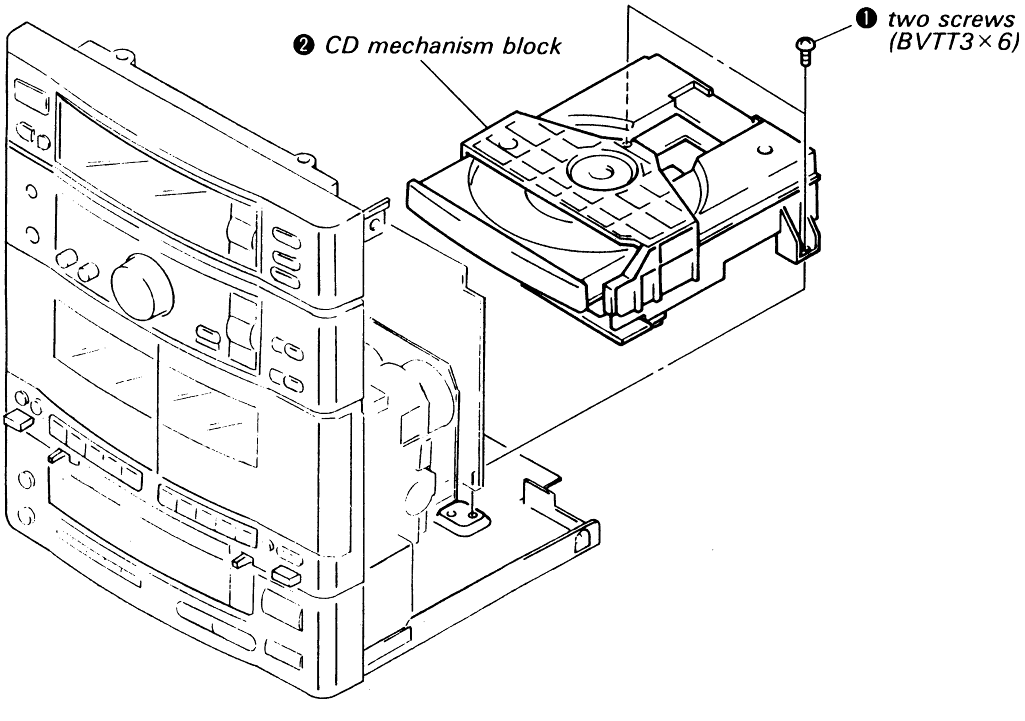
3-2. POWER BLOCK REMOVAL


❸ two screws (BVTT3 × 6)
❶ flat type wire (11 core) (CN404/VOL Board)
❷ connector (CN854/POWER(A) board)
❺ two connectors (CN802, 803/ power board)
❹ POWER(A) board block
❾ two connectors (CN851, 853/ POWER(B) board)
❻ two screws (BVTT3 × 6)
❽ power transformer (T101)
❿ screw (BVTT3 × 6)
❼ two screws (BVTT3 × 6)
⓫ POWER(B) board

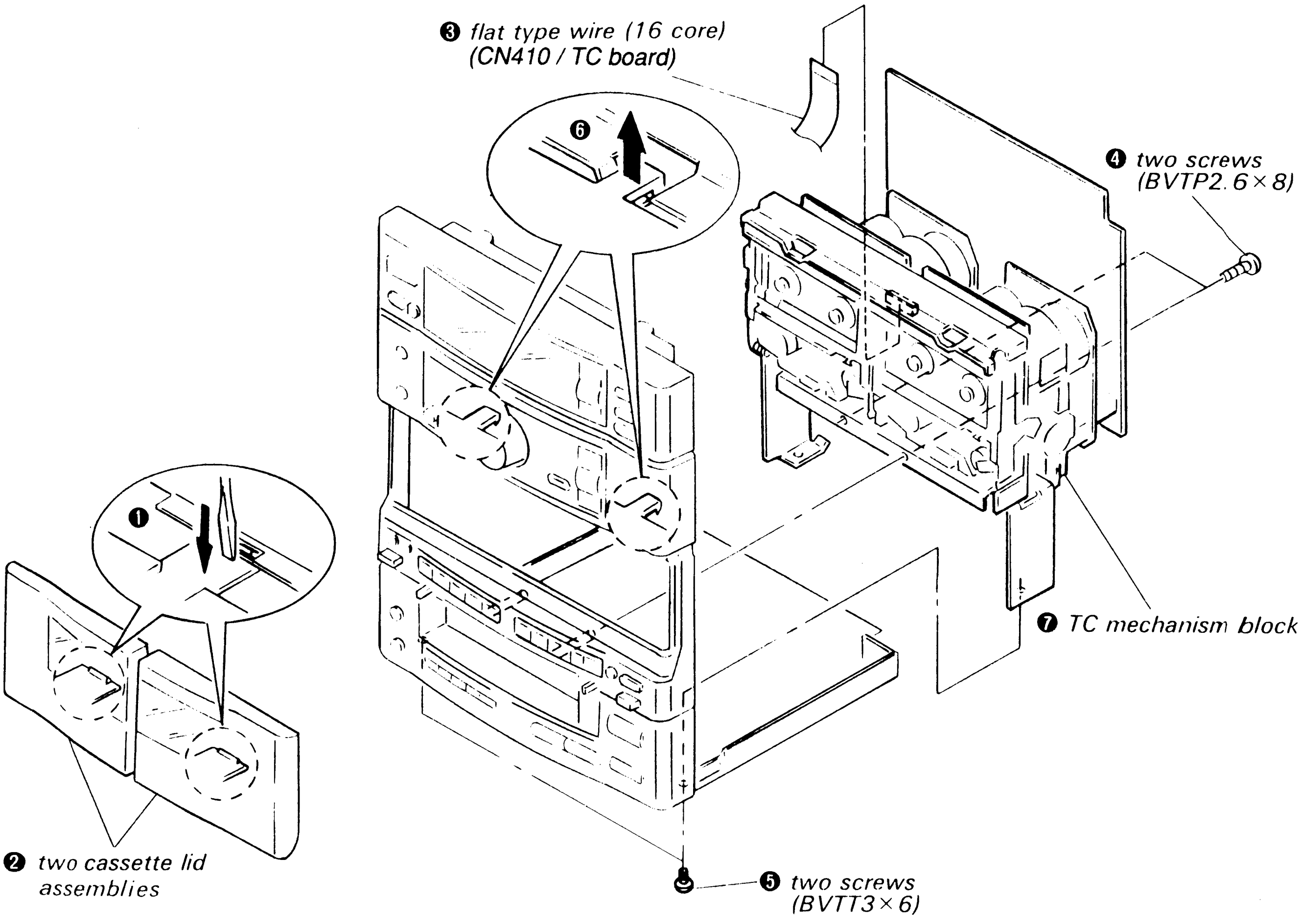
3-3. MAIN BOARD REMOVAL


❸ flat type wire (9 core)
(CN204/MAIN board)
❻ MAIN board
❶ nylon rivet (3.5φ)
❹ connector
(CN251/MAIN board)
❺ flat type wire (19 core)
(CN207/MAIN board)
❷ screw
(BVTT3×6)

3-4. CD MECHANISM BLOCK REMOVAL


❷ CD mechanism block
❶ two screws
(BVTT3×6)

3-5. TC MECHANISM BLOCK REMOVAL


❸ flat type wire (16 core)
(CN410 / TC board)
❻
❹ two screws
(BVTP2.6×8)
❶
❼ TC mechanism block
❷ two cassette lid
assemblies
❺ two screws
(BVTT3×6)

SECTION 4

IC PIN DESCRIPTION

- **IC401 Deck Controller (M50946-302) (TC board)**

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Symbol</th><th>Description</th></tr>
<tr><td>1</td><td>P62</td><td></td><td>G</td><td>GND</td></tr>
<tr><td>2</td><td>P61</td><td></td><td>G</td><td>GND</td></tr>
<tr><td>3</td><td>P60</td><td></td><td>G</td><td>GND</td></tr>
<tr><td>4</td><td>P47</td><td></td><td>G</td><td>GND</td></tr>
<tr><td>5</td><td>P46</td><td></td><td>G</td><td>GND</td></tr>
<tr><td>6</td><td>AN5</td><td>I</td><td>B HALF</td><td>Deck B record prevention claw A, B detection input (Analog)
<table>
<tr><td>Volgate (V)</td><td>1V</td><td>1.9V</td><td>2.8V</td><td>3.9V</td><td>5V</td></tr>
<tr><td>Harf</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>OFF</td></tr>
<tr><td>E. PROOF A</td><td>OFF</td><td>ON</td><td>OFF</td><td>ON</td><td>OFF</td></tr>
<tr><td>E. PROOF B</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td></tr>
</table></td></tr>
<tr><td>7</td><td>AN4</td><td>I</td><td>KEY Y</td><td rowspan="2">KEY input
<table>
<tr><td>Volgate (V)</td><td>0</td><td>0.3</td><td>0.7</td><td>1.2</td><td>1.7</td><td>2.3</td><td>2.8</td><td>3.4</td><td>4.0</td><td>4.5</td><td>5.0</td></tr>
<tr><td>KEY Y</td><td>B■</td><td>B❚❚</td><td>B▶</td><td>B◀</td><td></td><td>A◀◀</td><td>A▶▶</td><td></td><td></td><td>RELAY</td><td>OFF</td></tr>
<tr><td>KEY X</td><td>A■</td><td>A▶</td><td>A◀</td><td>A◀</td><td>B◀◀</td><td>B●</td><td>B</td><td>CD</td><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td>8</td><td>AN3</td><td>I</td><td>KEY X</td></tr>
<tr><td>9</td><td>AN2</td><td>I</td><td>AMS IN</td><td>AMS signal input</td></tr>
<tr><td>10</td><td>P41</td><td>O</td><td>$\overline{\text{L MUTE}}$</td><td>Line mute output</td></tr>
<tr><td>11</td><td>P40</td><td>O</td><td>$\overline{\text{R MUTE}}$</td><td>mute output</td></tr>
<tr><td>12</td><td>P37</td><td>O</td><td>RELAY (B MD)</td><td>REC/PB change relay output</td></tr>
<tr><td>13</td><td>P36</td><td>O</td><td>R/P</td><td>Dolby IC REC/PB select output</td></tr>
<tr><td>14</td><td>P35</td><td>O</td><td>EQ70</td><td>Playback EQ output for playing deck</td></tr>
<tr><td>15</td><td>P34</td><td>O</td><td>SEL A/$\overline{\text{B}}$</td><td>Dolby IC PB input Deck A/B select output</td></tr>
<tr><td>16</td><td>P33</td><td>O</td><td>AMS A/$\overline{\text{B}}$</td><td>AMS AMP input Deck A/B select output</td></tr>
<tr><td>17</td><td>P32</td><td>I</td><td>AU BUS</td><td>AUDIO BUS input</td></tr>
<tr><td>18</td><td>P31</td><td>O</td><td>BIAS</td><td>Bias oscillation output</td></tr>
<tr><td>19</td><td>P30</td><td>O</td><td>AUB OUT</td><td>AUDIO BUS output</td></tr>
<tr><td>20</td><td>INT1</td><td>I</td><td>A UBUS</td><td>AUDIO BUS normal input</td></tr>
<tr><td>21</td><td>NC</td><td>—</td><td>———</td><td>———</td></tr>
<tr><td>22</td><td>NC</td><td>—</td><td>———</td><td>———</td></tr>
<tr><td>23</td><td>NC</td><td>—</td><td>———</td><td>———</td></tr>
<tr><td>24</td><td>CNVSS</td><td></td><td>CNVSS</td><td>GND</td></tr>
<tr><td>25</td><td>$\overline{\text{RESET}}$</td><td>I</td><td>$\overline{\text{RESET}}$</td><td>Microcomputer reset input</td></tr>
<tr><td>26</td><td>XIN</td><td>I</td><td>XIN</td><td>Clock input (4MHz)</td></tr>
<tr><td>27</td><td>Xo</td><td>O</td><td>Xo</td><td>Clock output (4MHz)</td></tr>
<tr><td>28</td><td>Φ</td><td>O</td><td>Φ</td><td>Not used (open)</td></tr>
<tr><td>29, 65</td><td>Vss</td><td></td><td>Vss</td><td>GND</td></tr>
<tr><td>30</td><td>P57</td><td>I</td><td>PW IN</td><td>POWER OFF detection input</td></tr>
<tr><td>31</td><td>P56</td><td>I</td><td>A STOP</td><td>Deck A STOP switch input</td></tr>
<tr><td>32</td><td>P55</td><td>I</td><td>$\overline{\text{A HALF}}$</td><td>Deck A Half switch input</td></tr>
<tr><td>33</td><td>P54</td><td>I</td><td>A SHUT</td><td>Deck A Reel table signal input</td></tr>
<tr><td>34</td><td>P53</td><td>I</td><td>A70 U</td><td>Deck A TYPE II switch input</td></tr>
<tr><td>35</td><td>P52</td><td>I</td><td>B STOP</td><td>Deck B STOP switch input</td></tr>
<tr><td>36</td><td>P51</td><td>I</td><td>B SHUT</td><td>Deck B Reel table signal input</td></tr>
<tr><td>37</td><td>P50</td><td>I</td><td>B70 U</td><td>Deck B TYPE II switch input</td></tr>
<tr><td>38</td><td>NC</td><td>—</td><td>———</td><td>———</td></tr>
<tr><td>39</td><td>P17</td><td>O</td><td>ARM 3</td><td>Deck A Reel Motor control out</td></tr>
<tr><td>40</td><td>P16</td><td>O</td><td>ARM 2</td><td>Deck A Reel Motor control out</td></tr>
</table>

Pin No.	Pin Name	I/O	Symbol	Description
41	P15	O	ARM 1	Deck A Reel Motor control out
42	P14	O	BRM 3	Deck B Reel Motor control out
43	P13	O	BRM 2	Deck B Reel Motor control out
44	P12	O	BRM 1	Deck B Reel Motor control out
45	P11	O	H/L	Capstan motor speed select
46	P10	O	A CM	A Capstan motor ON/OFF
47	P07	O	B CM	B Capstan motor ON/OFF
48	P06	I	BS/ASCH	Deck A Reel table/BS signal input
49	P05	I	A • P/BSCH	Deck B Reel table/A • P signal input
50	P04	O	A ◁	Deck A RVS LED output
51	P03	O	A ▷	Deck A FWD LED output
52	P02	O	A PLAY	Deck B RVS/FWD LED control output
53	P01	O	DUB H	High Speed Dubbing LED output
54	P00	O	DUB N	Normal Speed Dubbing LED output (Not used)
55	NC	—	———	———
56	P27	O	CD SYNC	Auto CD Synchro LED output
57	P26	O	B ◁	Deck B RVS LED output
58	P25	O	B ▷	Deck B FWD LED output
59	024	O	B PLAY	Deck B RVS/FWD LED control output
60	P23	O	B PAUSE	Deck B PAUSE LED output
61	P22	O	B ●	Auto CD Synchro LED output
62	P21	O	PASS	PASS amplifier switch output
63	P20	I	TEST	Electrical adjustment test mode setting
64	NC	—	———	———
66	NC	—	———	———
67	Vcc		Vcc	POWER 5 ± 0.5V
68	AVss		AVss	Analog system GND
69	VREF	I	VREF	Analog system reference voltage input
70	D • A		D • A	GND
71	PWM		———	GND
72	P63		———	GND

[TEST MODE]

When making pin (63) low (connect TP1 to ground with jumper wire), following function operates.

1. Sourec monitor
   Release the line mute while recording.

• IC202 CD Controller (μPD75116GF) (BD board)

Pin No.	Pin Name	I/O	Description
1	Not Used	O	OPEN
2	Not Used	O	OPEN
3	DPCLK	O	Display data transmission clock output
4	LATCH	O	Serial data latch pulse output for digital filter MSM6538
5	SHIPT	O	Serial clock output for digital filter MSM6538
6	AFT	O	Serial clock output for digital filter MSM6538
7	RESET	I	System reset input terminal (LOW ACTIVE)
8	X2	I	System clock input 4.0MHZ
9	X1	I	System clock input 4.0MHz
10	DFCTSW	O	For focus in till spindle kick is ON except then is OFF.
11	AMUTE	O	Muting ON/OFF output
12	BSOUT	O	Audio bus output
13	AFADJ	I	Teast mode input, and on time POWER "L" is test move ment of every kind
14	LDON	O	Laser diode ON/OFF output
15	XKT	O	Serial data latch pulse output for CXD2500BQ
16	CLK	O	Serial data output for CXD2500BQ
17	DATA	O	Serial data output for CXD2500BQ
18	Not Used	I	GND
19	ADJ	I	Test mode input, "L" is GFS no check.
20	GFS	I	GFS OK/NO Good input
21	FOK	I	Focus OK/NO Good input
22	Not Used	O	OPEN
23	Not Used	O	OPEN
24	LODOUT	O	Disc tray loading-out output
25	LODIN	O	Disc tray loading-out output
26	VSS	I	GND
27	INSW	I	Disk tray clamp-end input
28	OUTSW	I	Disk tray open-end input
29	(TIMER)	I	Timer start input
30	BSIN	I	Audio bus input
31	Not Used	I	GND
32	Not Used	I	GND
33	Not Used	I	GND
34	Not Used	I	GND
35	Not Used	I	GND
36	Not Used	I	GND
37	SENS	I	SENS input, and the state input of every kind from CXD2500BQ
38	TIMER	I	(NOT-PLAY)
39	D/F 16BT	I	(NOT-PLAY)
40	Not Used	I	GND
41	SUBQ	I	Q data serial input from CXD2500BQ
42	Not Used	O	OPEN
43	SQCLK	O	Sub-code Q data read-in clock output for CXD2500BQ
44	SCOR	I	Sub-code synchro S0 and S1 detect input
45	Not Used	O	OPEN
46	Not Used	O	OPEN
47	Not Used	O	OPEN
48	Not Used	O	OPEN
49	Not Used	I	OPEN
50	Not Used	I	OPEN

Pin No.	Pin Name	I/O	Description
51	Not Used	I	OPEN
52	Not Used	I	OPEN
53	Not Used	O	OPEN
54	Not Used	O	OPEN
55	Not Used	O	OPEN
56	Not Used	O	OPEN
57	Not Used	I	+5V
58	VDD	I	+5V
59	DPDAT3	O	OPEN
60	DPDAT2	O	OPEN
61	DPDAT1	O	OPEN
62	DPDAT0	O	OPEN

SECTION 5
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured alcoholmoistened swab:
   - record/playback head pinch roller
   - erase head rubber belt
   - capstan idler
2. Demagnetize the record/playback head with a head demagnetizer.
   (Head demagnetizer do not approach for the erase head.)
3. Do not use a magnetized screwdriver for the adjustment.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustment should be performed with the rated power supply voltage unless otherwise noted.

• Torque Measurement

Torque	Torque meter	Meter reading
Forward	CQ-102C	35 to 60g • cm (0.49 to 0.83oz • inch)
Forward back tension	CQ-102C	2 to 6g • cm (0.028 to 0.08oz • inch)
Reverse	CQ-102RB	35 to 60g • cm (0.49 to 0.83oz • inch)
Reverse back tension	CQ-102RB	2 to 6g • cm (0.028 to 0.08oz • inch)
FF/REW	CQ-201B	70 to 110g • cm (0.98 to 1.52oz • inch)

- **FL tube, LED, Key and SIRCS Check Mode**
- At POWER ON, press "BAND" , "DBFB" and "POWER" keys simultaneously to activate the Check mode.
- In the Check mode, FL tube and LEDs are all come on.
- When "TIMER" key is pressed, FL tube and a part of LEDs come on.
- Key check and one LED ON
  Keys to be checked are associated with segments (1-15), one by one.
  The segment associated with the pressed key goes off, and the segments associate with non-pressed keys come on. One LED comes on, and LED that comes on is shifted each time the key is pressed. when all keys are pressed at least once, "PASS" is displayed in the center, and all LEDs come on.
- SIRCS check (with RM-S150)
  When CD PAUSE is received, the Pause segment comes on.
- To turn off the Check mode, press "POWER" key or send SIRCS POWER CODE.
- When LEDs are partially ON

ON LEDs :	OFF LEDs :
PRESET 1	PRESET 2
PRESET 3	PRESET 4
PRESET 5	SURROUND
DBFB	MPX
PON	

- The corresponding of Segments with Keys

Segments		Keys
1	:	TIMER REC
2	:	+(PRESET/TIMER)
3	:	BAND
4	:	-(PRESET/TIMER)
5	:	MEMORY/NEXT
6	:	STEREO/MONO
7	:	+(TUNING)
8	:	-(TUNING)
9	:	DBFB
10	:	S-SUR
11	:	FUNCTION
12	:	EQ
13	:	PRESET
14	:	(not used)
15	:	OPEN/CLOSE

SECTION 6
ELECTRICAL ADJUSTMENTS

DECK SECTION

1. The adjustment should be performed in the publication.
   (Be sure to make playback adjustment at first.)
2. The adjustment and measurement should be performed for both L-CH and R-CH.
   - Switch position
     DOLBY NR switch : OFF

•Test tape

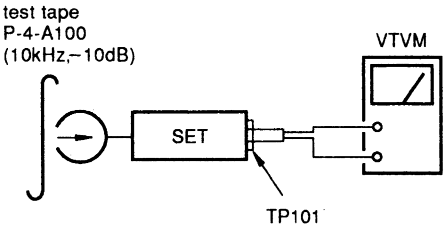
Tape	Contents	Use
P-4-A100	10kHz,–10dB	Head Azimuth Adjustment
P-4-L300	315Hz, 0dB	Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

Record/Playback Head Azimuth Adjustment

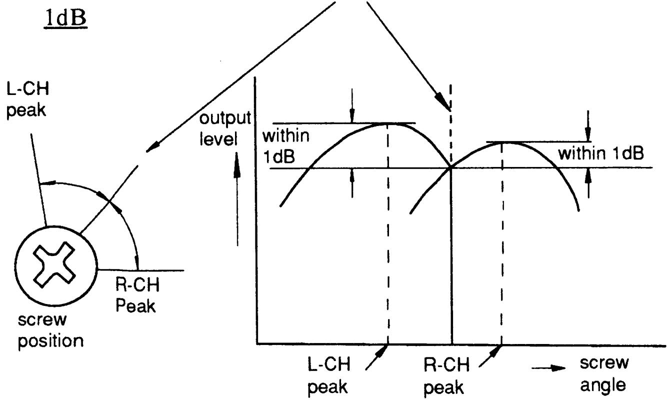
DECK A **DECK B**

Procedure :

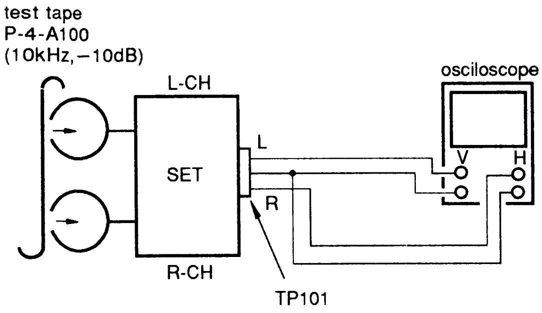
1. Forward Playback Mode
   Reverse Playback Mode

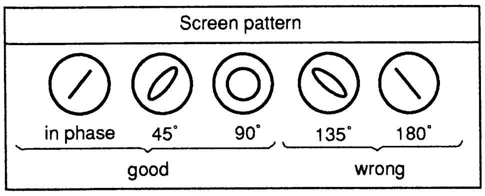


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB


L-CH peak
R-CH Peak
screw position
output level
within 1dB
within 1dB
L-CH peak
R-CH peak
screw angle

3. Playback Mode

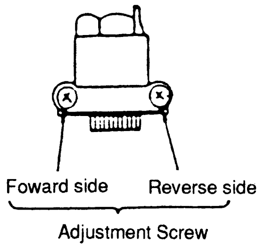

test tape
P-4-A100
(10kHz, -10dB)
L-CH
SET
R-CH
L
R
TP101
osciloscope
V
H


Screen pattern
in phase
45°
90°
135°
180°
good
wrong

4. Change the review playback mode and repeat the steps 1 to 3.
5. After the adjustment, lock the adjustment screw with suitable locking compound.

Adjustment Location :

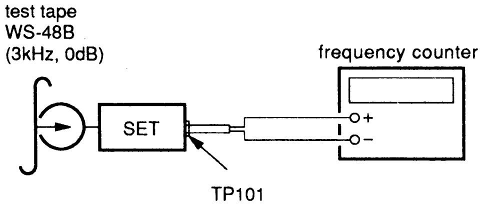
— record/playback head (deck A and B)


Foward side
Reverse side
Adjustment Screw

Tape Speed Adjustment **DECK A** **DECK B**

Procedure :

- Perform high speed adjustment before normal speed adjustment.
Mode : Playback


test tape
WS-48B
(3kHz, 0dB)
SET
TP101
frequency counter
+
-

Speed	Deck	Adjustment	Frequency counter
※High	A	RV72A	5,970 to 6,030Hz
	B	RV72B	
Normal	A	RV71A	2,970 to 3,030Hz
	B	RV71B	

※ Continue to press HIGH SPEED DUBBING switch(S1524) in playback mode : High speed playback.

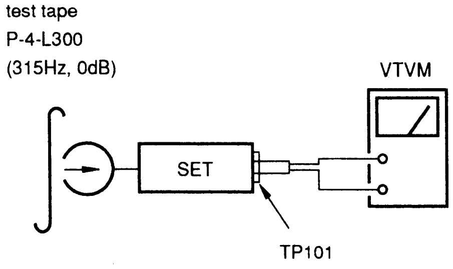
Frequency difference between the begining and the end of the tape should be within ±0.23%.

Adjustment Location: AUDIO-A and AUDIO-B boards.

Playback Level Adjustment **DECK A** **DECK B**

Procedure :

Mode : playback


test tape
P-4-L300
(315Hz, 0dB)
SET
TP101
VTVM

Deck A is RV11A (L-CH) and RV21A (R-CH), deck B is RV11B (L-CH) and RV21B(R-CH) so that adjustment within adjustment level as follows.

Adjustment Level :

LINE OUT level -8.2dB to -7.2dB (0.301 to 0.338V)Level
Difference between Channels : within 1dB

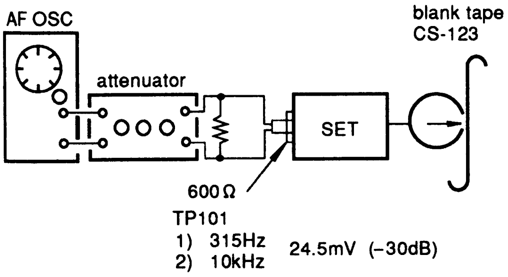
Confirm the DOLBY OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location : AUDIO-A and AUDIO-B boards

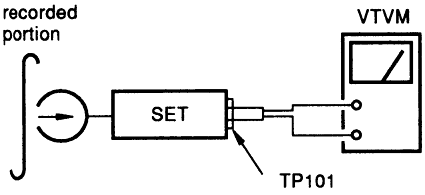
Record Bias Adjustment **DECK B**

Procedure :

1. record mode


AF OSC
attenuator
blank tape
CS-123
SET
600Ω
TP101
1) 315Hz
2) 10kHz
24.5mV (-30dB)

2. playback mode


recorded
portion
VTVM
SET
TP101

Confirm playback the signal recorded in step 1 become adjustment level as follows.
If these levels do not adjustment level, adjustment the RV12 (L-CH) and RV22 (R-CH) to repeat step 1 and 2.

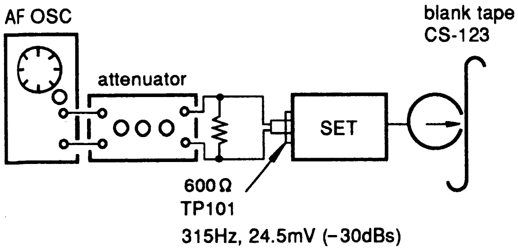
Adjustment level : playback output of 315Hz to playback output of 10kHz : -1.0dB to 1.0dB

Adjustment Location : AUDIO-B board

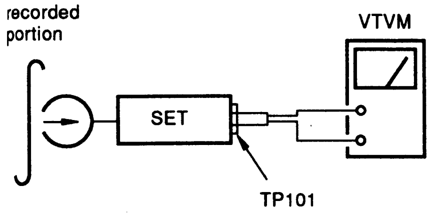
Record Level Adjustment **DECK B**

Procedure :

1. record mode


AF OSC
attenuator
blank tape
CS-123
SET
600Ω
TP101
315Hz, 24.5mV (-30dBs)

2. playback mode


recorded
portion
VTVM
SET
TP101

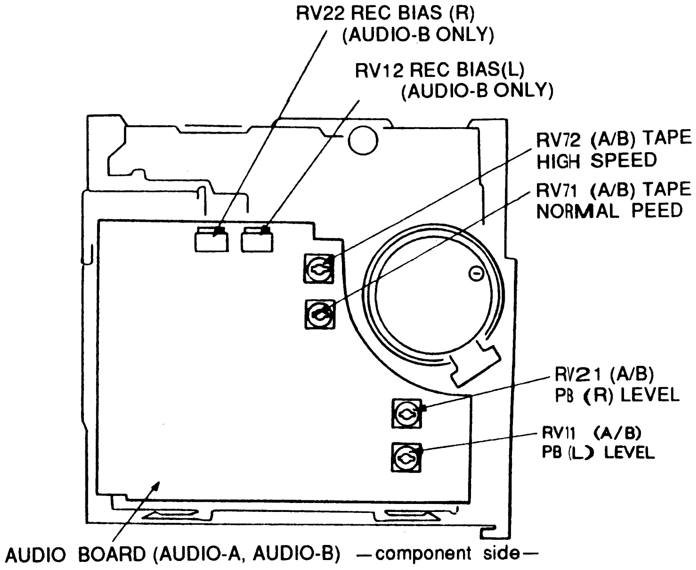
Confirm playback the signal recorded in step become adjustment level as follows.
If these levels do not adjustment level, adjustment the RV201 (L-CH) and RV301 (R-CH) to repeat step 1 and 2.

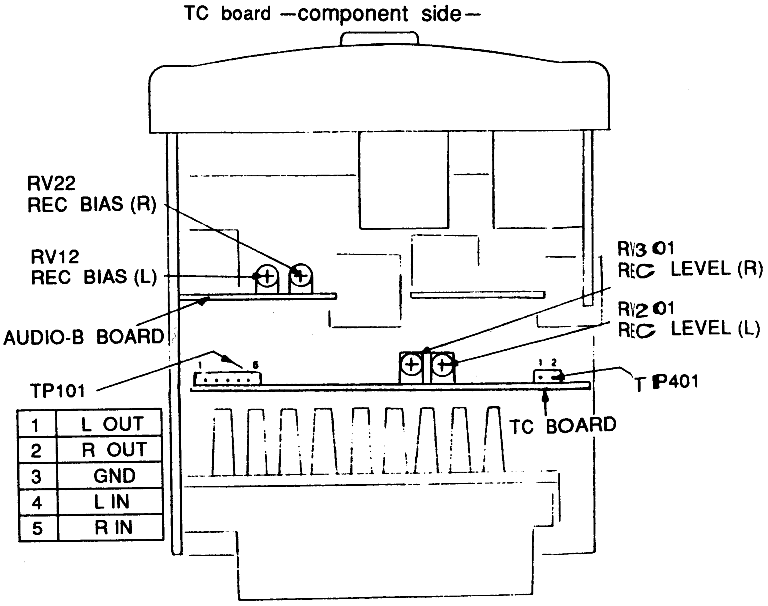
Adjustment Level :

LINE OUT level : 30dBs±0.5dB (25.9 to 23.1mV)

Adjustment Location : MAIN board

Adjustment Location :


RV22 REC BIAS (R)
(AUDIO-B ONLY)
RV12 REC BIAS(L)
(AUDIO-B ONLY)
RV72 (A/B) TAPE HIGH SPEED
RV71 (A/B) TAPE NORMAL PEED
RV21 (A/B) PB (R) LEVEL
RV11 (A/B) PB (L) LEVEL
AUDIO BOARD (AUDIO-A, AUDIO-B) —component side—


TC board —component side—
RV22
REC BIAS (R)
RV12
REC BIAS (L)
AUDIO-B BOARD
TP101
RV301
REC LEVEL (R)
RV201
REC LEVEL (L)
TP401
TC BOARD
1
5
1 2

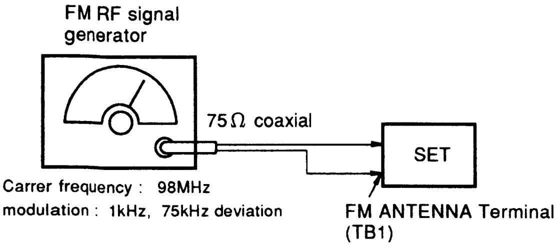
1	L OUT
2	R OUT
3	GND
4	L IN
5	R IN

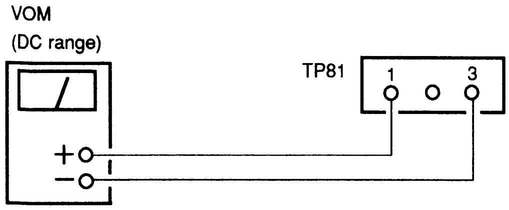
Note : As a front-end (FE1) is difficult to repair if faulty, replace it with new one.

TUNER SECTION

FM SECTION ADJUSTMENTS

Setting :


FM RF signal generator
75Ω coaxial
SET
Carrer frequency : 98MHz
modulation : 1kHz, 75kHz deviation
FM ANTENNA Terminal (TB1)


VOM
(DC range)
TP81
1
3
+
−

FM Discriminator Alignment (NULL Check)

Band : FM

Procedure :

1. Supply a 1mV(60dB μ) 98MHz signal from the ANTENNA terminal.
2. Tune the set to 98MHz.
3. Adjust IFT82 for 0V reading on the VOM.

Note : FM tuned indication lighting level adjustment should be made after FM discriminator alignment.

Adjustment Location: MAIN board

FM Tuned Indication Lighting Level Adjustment

Band : FM

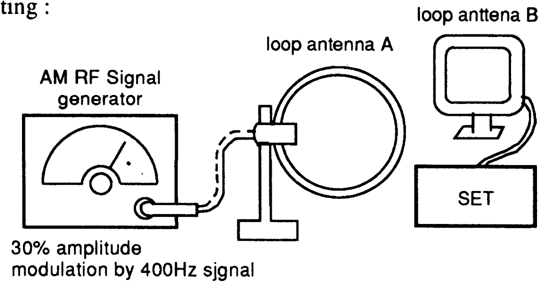
Procedure:

1. Supply a 25dB μ (AEP only), 20dB μ (G.IT only) 98MHz signal from the ANTENNA terminal.
2. Tune the set to 98MHz.
3. Adjust RV81 so that the TUNED light up.

- Repeat the procedures in each adjustment several times. and the frequency coverage and tracking adjustments should be finally done by trimmer capacitors.

AM SECTION ADJUSTMENTS

Setting :


loop anttena B
loop antenna A
AM RF Signal generator
SET
30% amplitude modulation by 400Hz sjgnal

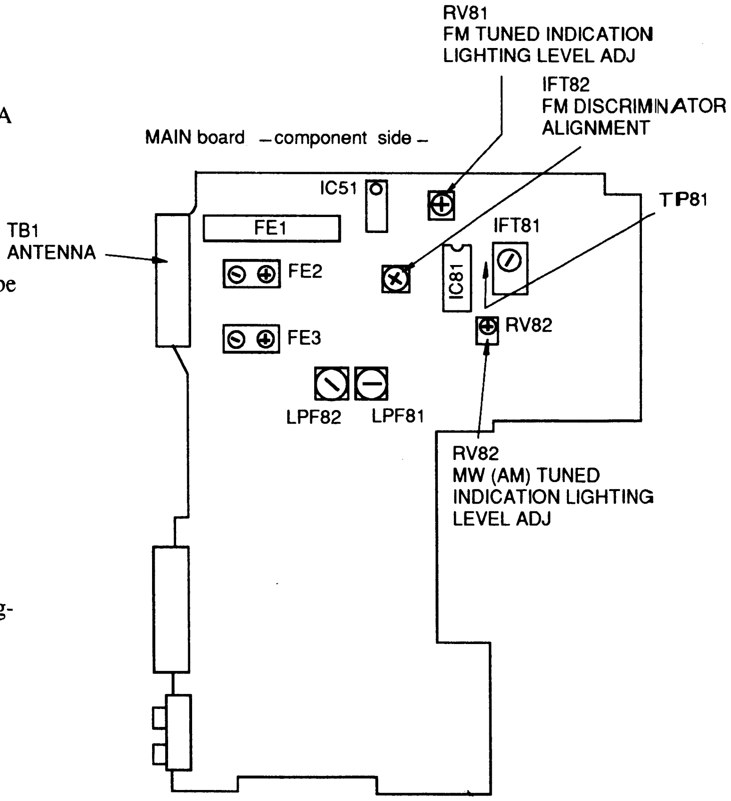
MW Tuned Indication Lighting Level Adjustment

Band : MW

Procedure:

1. Set loop antenna A so that the loop antenna. B input level becomes 55dB μ.
2. Tune the set to 999kHz.
3. Adjust the RV82 so that the TUNED light up.

Adjustment Location : MAIN board -component side-

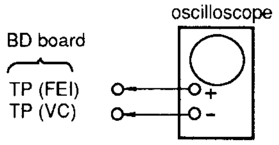

RV81
FM TUNED INDICATION LIGHTING LEVEL ADJ
IFT82
FM DISCRIMINATOR ALIGNMENT
MAIN board −component side−
IC51
TP81
FE1
IFT81
TB1 ANTENNA
FE2
IC81
RV82
FE3
LPF82
LPF81
RV82
MW (AM) TUNED INDICATION LIGHTING LEVEL ADJ

CD SECTION

Note :

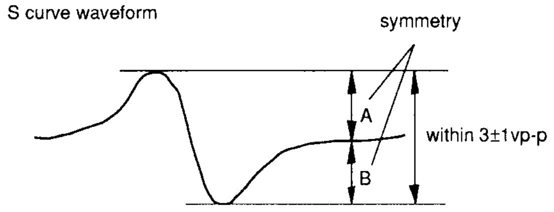
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check



Procedure :

1. Connect oscilloscope to test point TP (FEI) on BD board.
2. Connect between test point TP (FE) and TP (VC) by lead wire.
3. Turned Power switch on and actuate the focus serch.
   (acutuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope wavefrom (S curve) is symmetrical between A and B. And confirm peak to peak level within 3±1Vp-p.

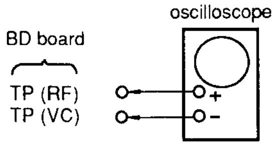


5. After check, remove the lead wire connected in step 2.

Note :

- Try to mesure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
- Take sweep time as long as possible and lightup the brightness to obtain best waveform.

RF Level Check

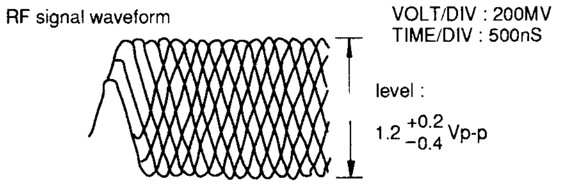


Procedure :

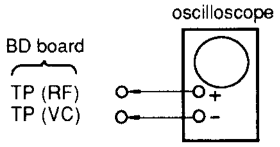
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turned Power switch on
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

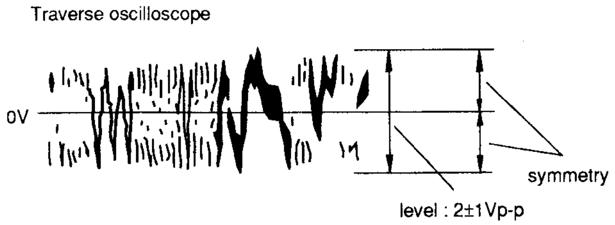


E-F Balance Check



Procedure:

1. Connect test point TP (ADJ) to ground and TP (TEO) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TEI) on BD board.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

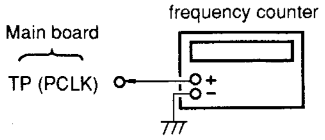


6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point (PCLK) with lead wire.



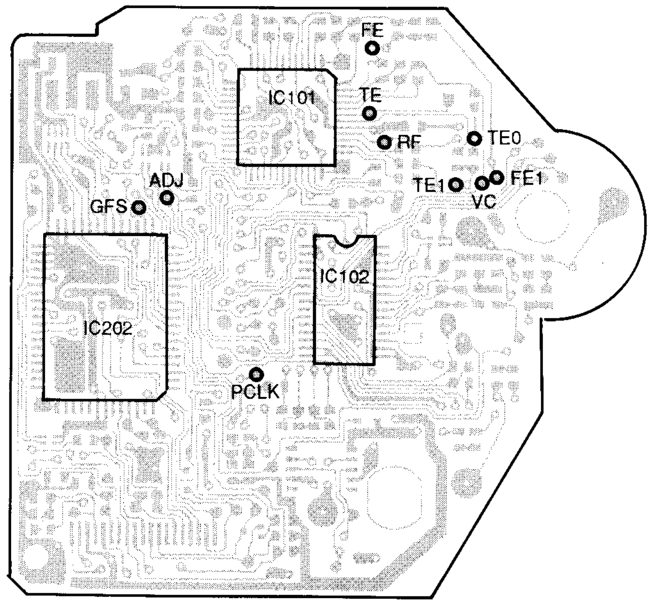
2. Turned Power switch on.
3. Confirm that reading on frequency counter is 4.3218MHz.

Focus/Tracking Gain

This gain has a margin, so even if it is slightly off.
There is no problem.
Therefore, do not perform, this adjustment.
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

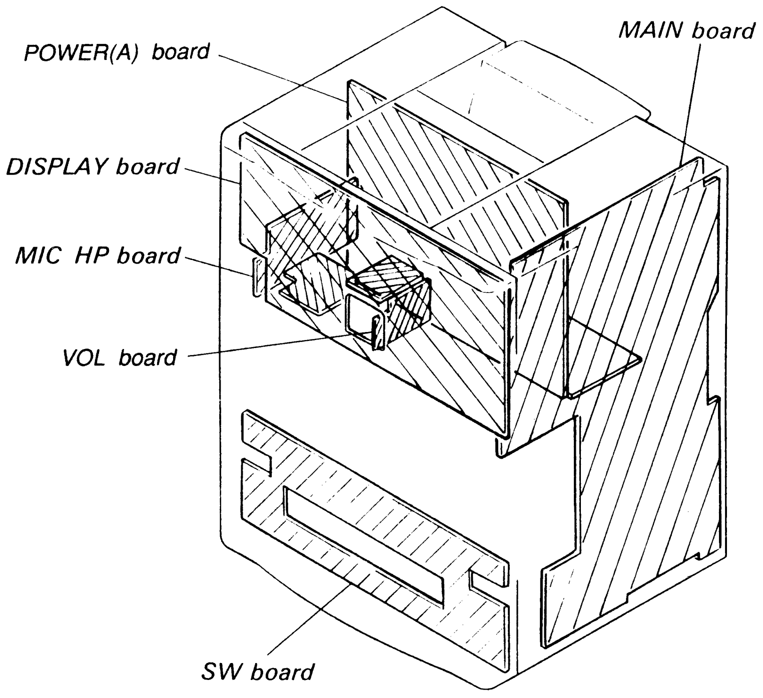
Adjustment Location :

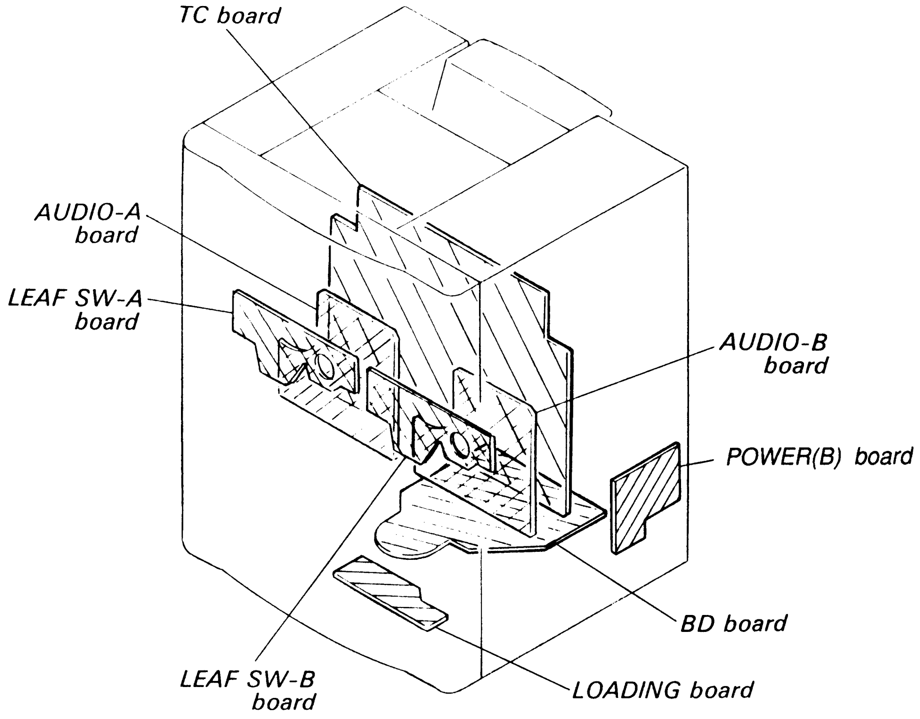
BD board -conductor side-



SECTION 7
DIAGRAMS

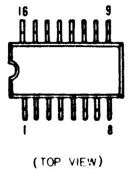
7-1. CIRCUIT BOARDS LOCATION


POWER(A) board
MAIN board
DISPLAY board
MIC HP board
VOL board
SW board

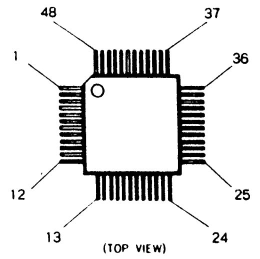

TC board
AUDIO-A board
LEAF SW-A board
AUDIO-B board
POWER(B) board
BD board
LEAF SW-B board
LOADING board

7-2. SEMICONDUCTOR LEAD LAYOUTS

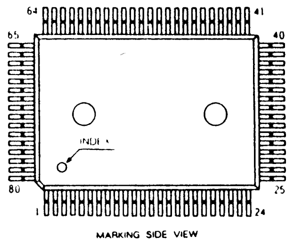
CD4052BCM


16
9
1
8
(TOP VIEW)

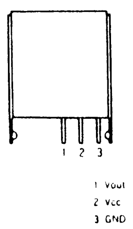
CXA1372AQ


48
37
1
36
12
25
13
24
(TOP VIEW)

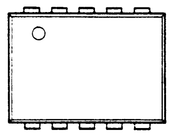
CXD2500BQ


64
41
65
40
INDEX
80
25
1
24
MARKING SIDE VIEW

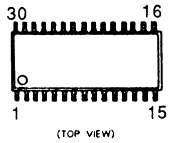
GP1U59XB


1 2 3
1 Vout
2 Vcc
3 GND

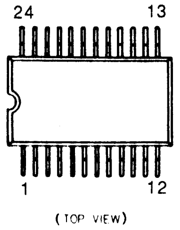
LA5601



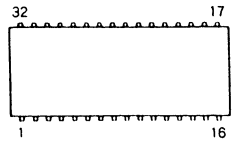
LA6525M


30
16
1
15
(TOP VIEW)

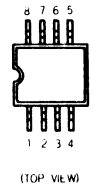
MSM6538-01GS


24
13
1
12
(TOP VIEW)

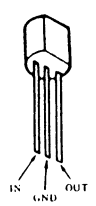
M5218AP



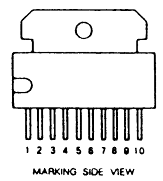
M54641FP


8 7 6 5
1 2 3 4
(TOP VIEW)

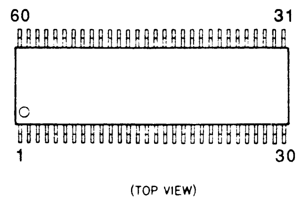
PST572E



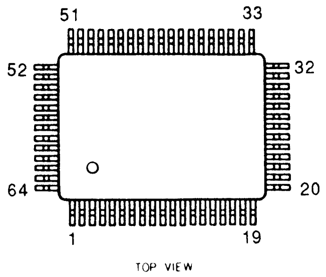
TA7272P


1 2 3 4 5 6 7 8 9 10
MARKING SIDE VIEW

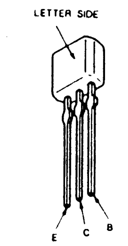
SN755703


60
31
1
30
(TOP VIEW)

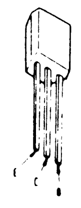
µPD75116GF-F21-3BE


51
33
52
32
64
20
1
19
TOP VIEW

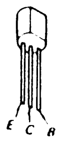
2SA1175-HFE
25C2785-HFE
DTA124ES


LETTER SIDE
E
C
B

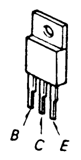
2SC2724-CD
2SC3622A-LK
DTA114ES
DTA144ES
DTC114ES
DTC143TS



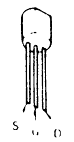
2SC1841-PAFAEA
2SC3112



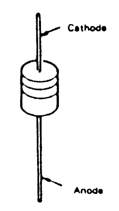
2SA473
2SD2012



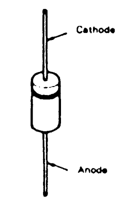
2SK246-GR3



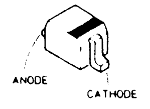
HZS6A1L
HZS6C3L
UZL-9M2


Cathode
Anode

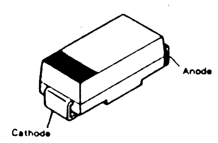
1N4148M
UZ-36BSB
1S1585
10E2


Cathode
Anode

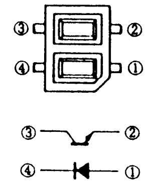
1SS352
DTZ3.9B


ANODE
CATHODE

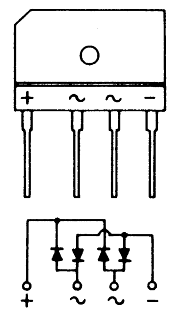
EC10DS2


Anode
Cathode

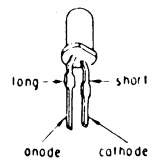
NJL5165K-B



D5SBA20F01



SML1260S
SML1460E
SML1960E
SML1960S


long
short
anode
cathode

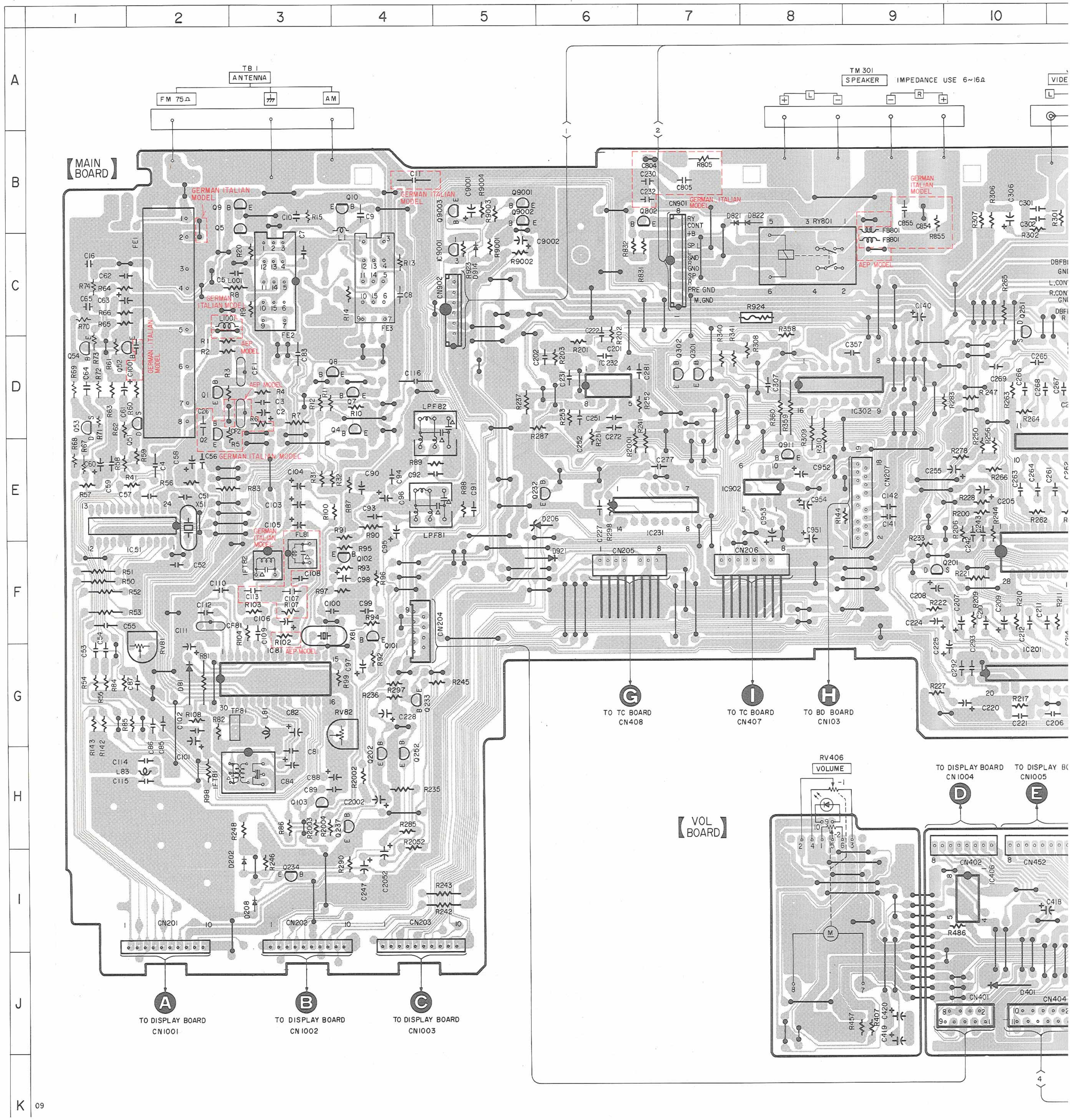
7-3. PRINTED WIRING BOARDS—MAIN Section—

- See page 19, 20 for Circuit Boards Location and Semiconductor Lead Layouts.

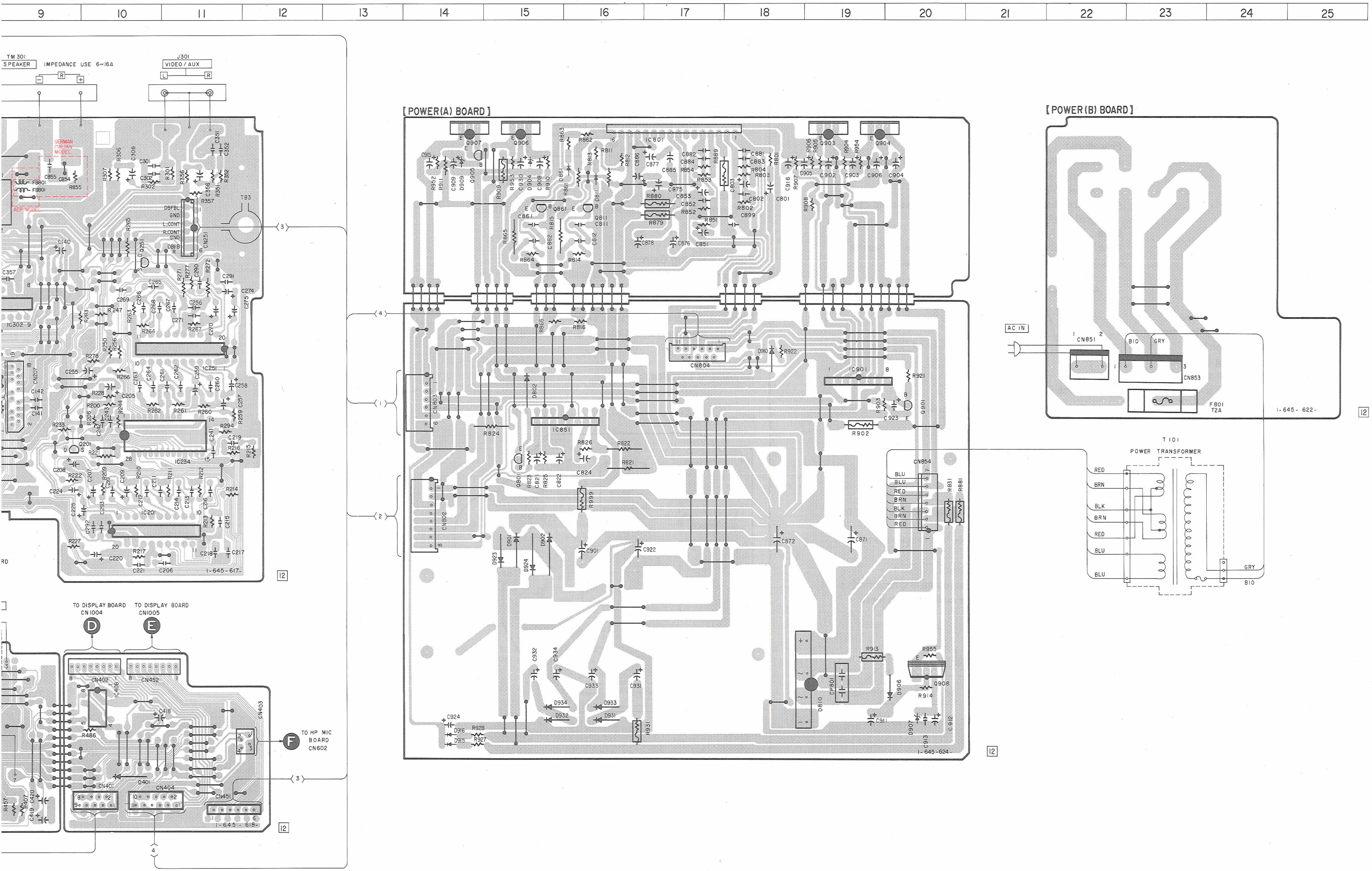
- Semiconductor Locator

Ref. No.	Location	Ref. No.	Location
D81	G-2	Q1	D-2
D202	I-3	Q2	D-2
D206	E-6	Q4	D-4
D208	I-3	Q5	B-3
D401	J-10	Q7	D-4
D802	E-15	Q8	D-4
D810	I-19	Q9	B-3
D811	B-16	Q10	B-4
D821	B-8	Q51	D-2
D822	B-8	Q52	D-1
D861	B-16	Q53	D-1
D901	G-15	Q54	D-1
D902	G-15	Q101	F-4
D904	B-15	Q102	F-4
D906	I-20	Q103	H-3
D907	I-20	Q201	F-9
D909	B-14	Q202	H-4
D910	E-18	Q232	E-6
D914	C-5	Q233	G-4
D915	J-14	Q234	I-3
D916	I-14	Q237	H-4
D921	F-6	Q251	C-10
D923	G-15	Q252	H-4
D924	G-15	Q301	D-7
D931	I-16	Q302	D-7
D932	I-15	Q801	B-7
D933	I-16	Q802	B-7
D934	I-15	Q811	C-16
		Q861	C-15
IC51	F-2	Q901	E-20
IC81	G-3	Q903	B-19
IC201	G-10	Q904	B-19
IC231	E-7	Q905	B-14
IC232	D-6	Q906	B-15
IC234	F-11	Q907	B-14
IC251	E-11	Q908	I-20
IC302	D-9	Q911	E-8
IC406	I-10	Q9001	B-5
IC801	B-17	Q9002	B-5
IC851	E-15	Q9003	B-5
IC901	E-19		
IC902	E-8		
IC9001	C-5		

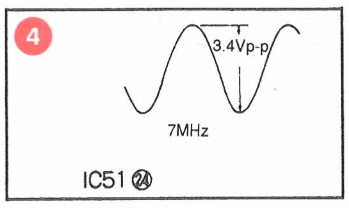
Note:
- o—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.



1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
I
J
K
TB I
ANTENNA
FM 75Ω
AM
TM 301
SPEAKER
IMPEDANCE USE 6~16Ω
MAIN BOARD
GERMAN, ITALIAN MODEL
AEP MODEL
VOL BOARD
RV406
VOLUME
TO TC BOARD CN408
TO TC BOARD CN407
TO BD BOARD CN103
TO DISPLAY BOARD CN1004
TO DISPLAY BOARD CN1005
TO DISPLAY BOARD CN1001
TO DISPLAY BOARD CN1002
TO DISPLAY BOARD CN1003
G
I
H
D
E
A
B
C
CN201
CN202
CN203
CN204
CN205
CN206
CN901
CN902
CN401
CN402
CN404
CN452
IC51
IC81
IC231
IC232
IC302
IC902
IC201
IC406
FE1
FE2
FE3
LPF81
LPF82
RY801
09


9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
TM301
SPEAKER
IMPEDANCE USE 6~16Ω
J301
VIDEO / AUX
L
R
GERMAN
ITALIAN
MODEL
AEP MODEL
CN251
IC302
IC251
IC234
IC201
1-645-617-
TO DISPLAY BOARD
CN1004
TO DISPLAY BOARD
CN1005
D
E
CN402
CN452
CN403
CN401
CN404
CN451
TO HP MIC
BOARD
CN602
F
1-645-618-
[POWER(A) BOARD]
Q907
Q906
IC801
Q903
Q904
CN804
IC901
CN803
IC851
CN802
CN854
BLU
BLU
RED
BRN
BLK
BRN
RED
D810
CP801
Q908
1-645-624-
[POWER(B) BOARD]
AC IN
CN851
CN853
B10
GRY
F801
T2A
1-645-622-
T101
POWER TRANSFORMER
RED
BRN
BLK
BRN
RED
BLU
BLU
GRY
B10
12

- Wave forms



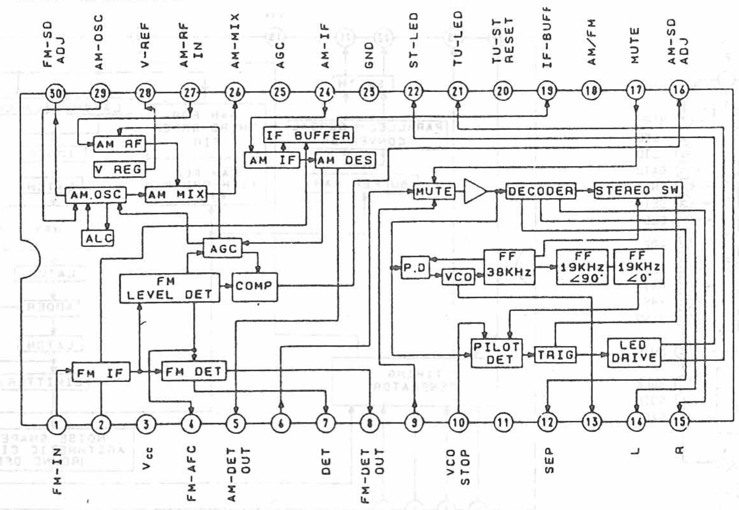
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:

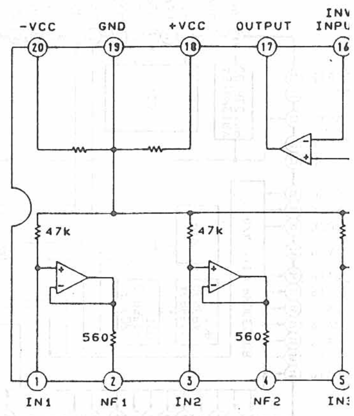
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- ▬ : B+Line
- ╍ : B-Line
- ☐ : adjustment for repair.
- Readings are taken with a non-signal.
- Voltages are taken with a VOM (Input Impedance 10MΩ) Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM ⊃ : PB(DECK A) ⊃» : REC(DECK B)
  ⇨ : CD

- IC Block Diagrams

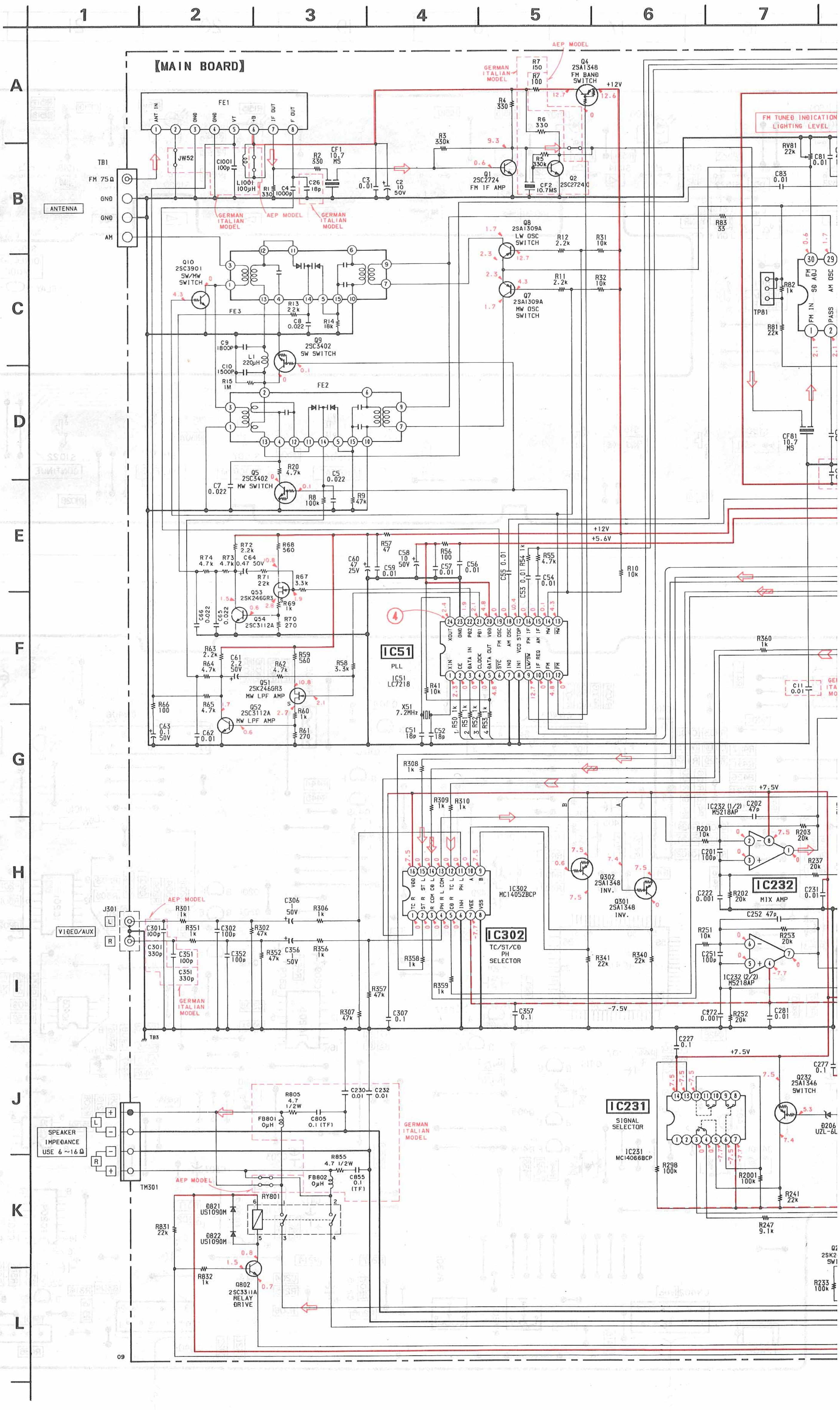
- IC81 LA1851N

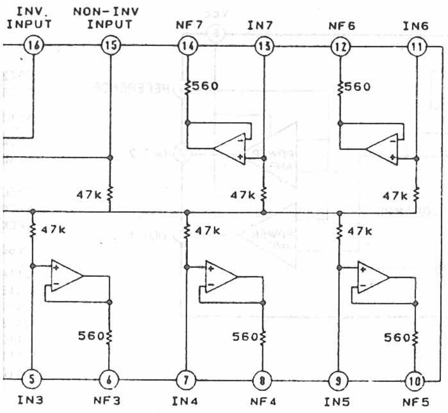

FM-SD ADJ
AM-OSC
V-REF
AM-RF IN
AM-MIX
AGC
AM-IF
GND
ST-LED
TU-LED
TU/ST RESET
IF-BUFF
AM/FM
MUTE
AM-SD ADJ
AM RF
V REG
AM OSC
AM MIX
ALC
IF BUFFER
AM IF
AM DES
MUTE
DECODER
STEREO SW
AGC
FM LEVEL DET
COMP
P.D
VCO
FF 38KHz
FF 19KHz ∠90°
FF 19KHz ∠0°
PILOT DET
TRIG
LED DRIVE
FM IF
FM DET
FM-IN
Vcc
FM-AFC
AM-DET OUT
DET
FM-DET OUT
VCO STOP
SEP
L
R

- IC201, 205 M5229P-G

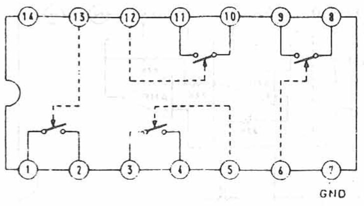

-VCC
GND
+VCC
OUTPUT
47k
47k
560
560
IN1
NF1
IN2
NF2

7-4. SCHEMATIC DIAGRAMS —MAIN Section—

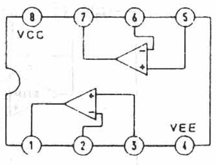

1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
K
L
[MAIN BOARD]
FE1
TB1
FM 75Ω
GND
GND
AM
ANTENNA
Q1 2SC2724 FM IF AMP
Q2 2SC2724
Q4 2SA1348 FM BAND SWITCH
Q8 2SA1309A LW OSC SWITCH
Q7 2SA1309A MW OSC SWITCH
Q10 2SC3901 SW/MW SWITCH
Q9 2SC3402 SW SWITCH
Q5 2SC3402 MW SWITCH
FE3
FE2
Q53 2SK246GR3
Q54 2SC3112A
Q51 2SK246GR3 MW LPF AMP
Q52 2SC3112A MW LPF AMP
IC51 PLL LC7218
X51 7.2MHz
GERMAN ITALIAN MODEL
AEP MODEL
FM TUNED INDICATION LIGHTING LEVEL
TP81
CF81 10.7 MS
J301
VIDEO/AUX
IC302 TC/ST/CD PH SELECTOR
IC302 MC14052BCP
Q302 2SA1348 INV.
Q301 2SA1348 INV.
IC232 MIX AMP
IC232 (1/2) M5218AP
IC232 (2/2) M5218AP
SPEAKER IMPEDANCE USE 6~16Ω
TM301
RY801
D821 US1090M
D822 US1090M
Q802 2SC3311A RELAY DRIVE
IC231 SIGNAL SELECTOR
IC231 MC14066BCP
Q232 2SA1346 SWITCH
+12V
+5.6V
+7.5V
-7.5V


INV. INPUT
NON-INV INPUT
NF7
IN7
NF6
IN6
560
47k
IN3
NF3
IN4
NF4
IN5
NF5

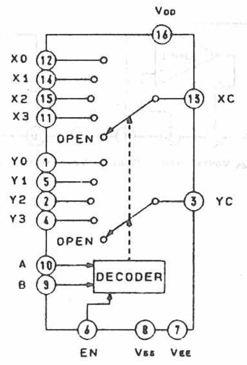
• IC231 MC14066BCP



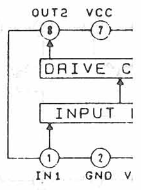
• IC232 M5218AP

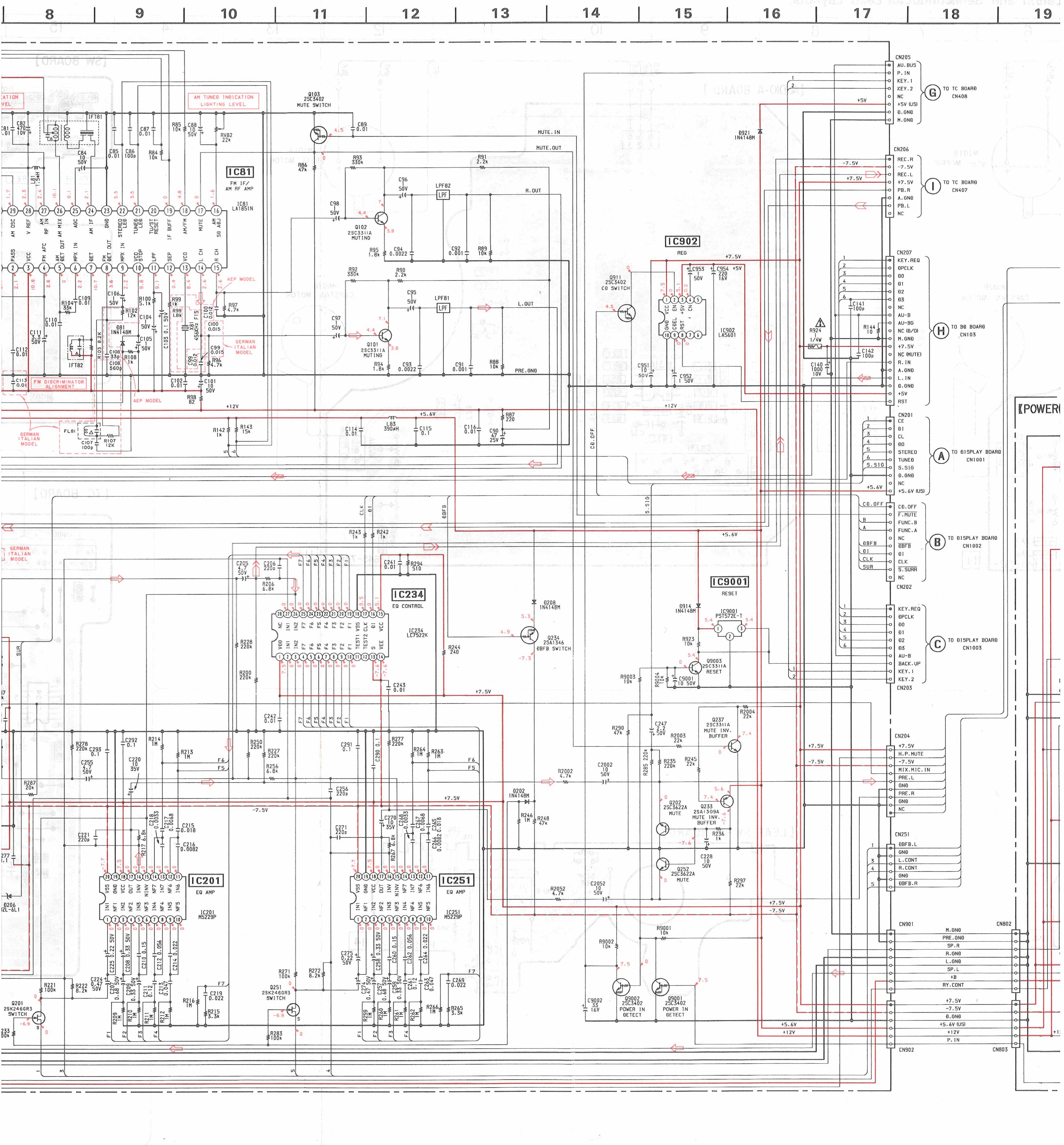


• IC302 MC14052BCP

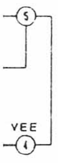

VDD
X0
X1
X2
X3
XC
OPEN
Y0
Y1
Y2
Y3
YC
A
B
DECODER
EN
VSS
VEE

• IC406 L

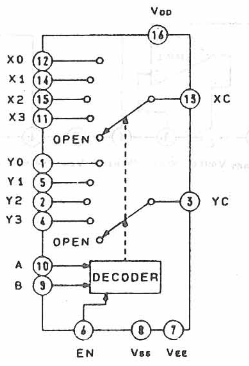

OUT2
VCC
DRIVE C
INPUT
IN1
GND


8
9
10
11
12
13
14
15
16
17
18
19
IC81
AM IF/AM RF AMP
IC81 LA1851N
Q103 2SC3402 MUTE SWITCH
AM TUNED INDICATION LIGHTING LEVEL
Q102 2SC3311A MUTING
Q101 2SC3311A MUTING
LPF82
LPF81
MUTE.IN
MUTE.OUT
R.OUT
L.OUT
PRE.GND
FM DISCRIMINATOR ALIGNMENT
AEP MODEL
GERMAN ITALIAN MODEL
IC902
REG
IC902 LA5601
Q911 2SC3402 CD SWITCH
D921 1N4148M
CD.OFF
S.SIG
IC234
EQ CONTROL
IC234 LC7522K
Q234 2SA1346 DBFB SWITCH
D208 1N4148M
IC9001
RESET
IC9001 PST572E-T
Q9003 2SC3311A RESET
Q237 2SC3311A MUTE INV. BUFFER
Q233 2SA1309A MUTE INV. BUFFER
Q202 2SC3622A MUTE
Q252 2SC3622A MUTE
Q9002 2SC3402 POWER IN DETECT
Q9001 2SC3402 POWER IN DETECT
IC201
EQ AMP
IC201 M5229P
IC251
EQ AMP
IC251 M5229P
Q201 2SK246GR3 SWITCH
Q251 2SK246GR3 SWITCH
D202 1N4148M
CN205
TO TC BOARD CN408
CN206
TO TC BOARD CN407
CN207
TO BD BOARD CN103
CN201
TO DISPLAY BOARD CN1001
CN202
TO DISPLAY BOARD CN1002
CN203
TO DISPLAY BOARD CN1003
CN204
CN251
CN901
CN902
CN802
CN803
POWER
+5.6V
+7.5V
-7.5V
+12V
+5V

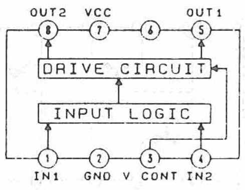
AP

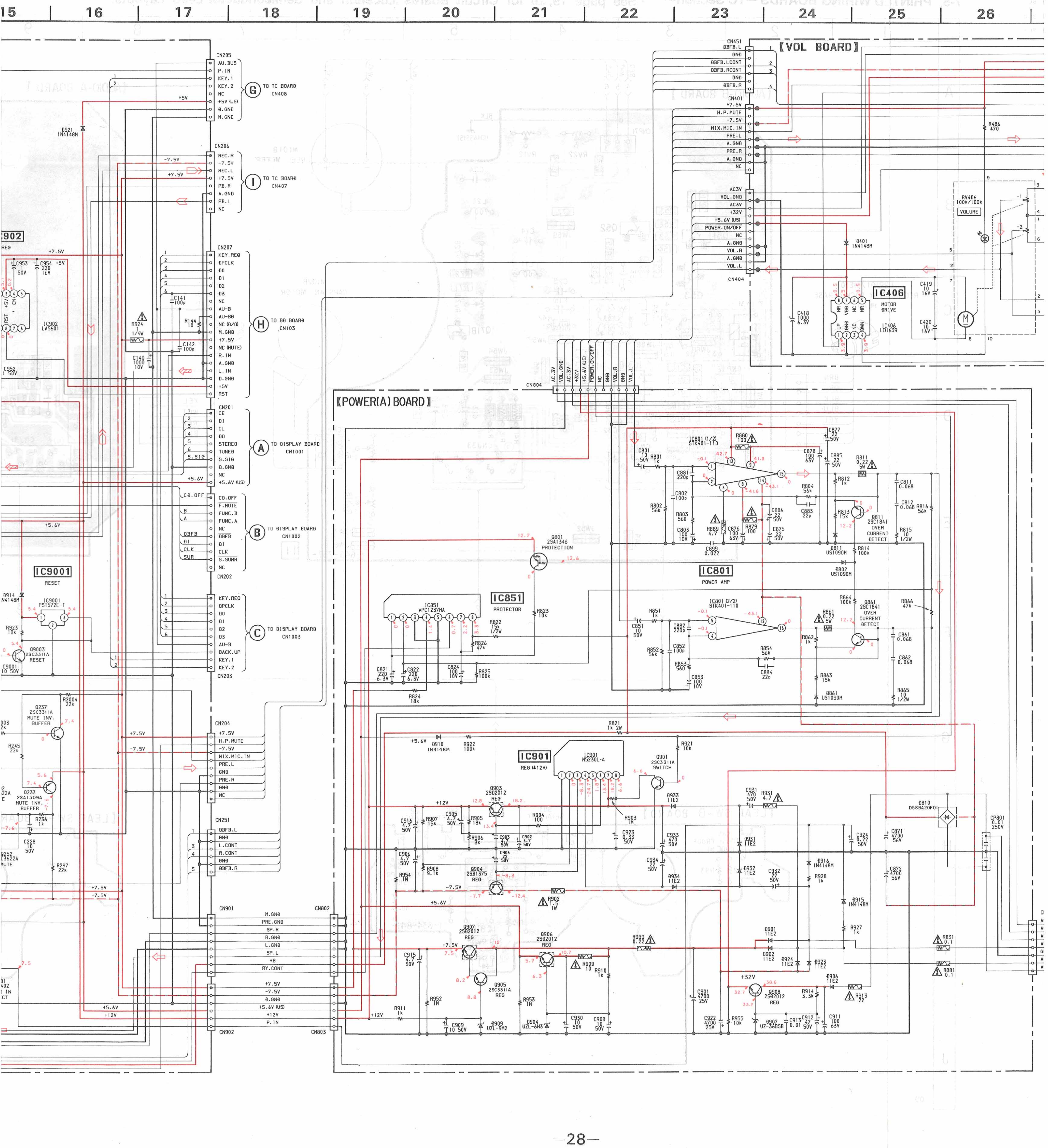


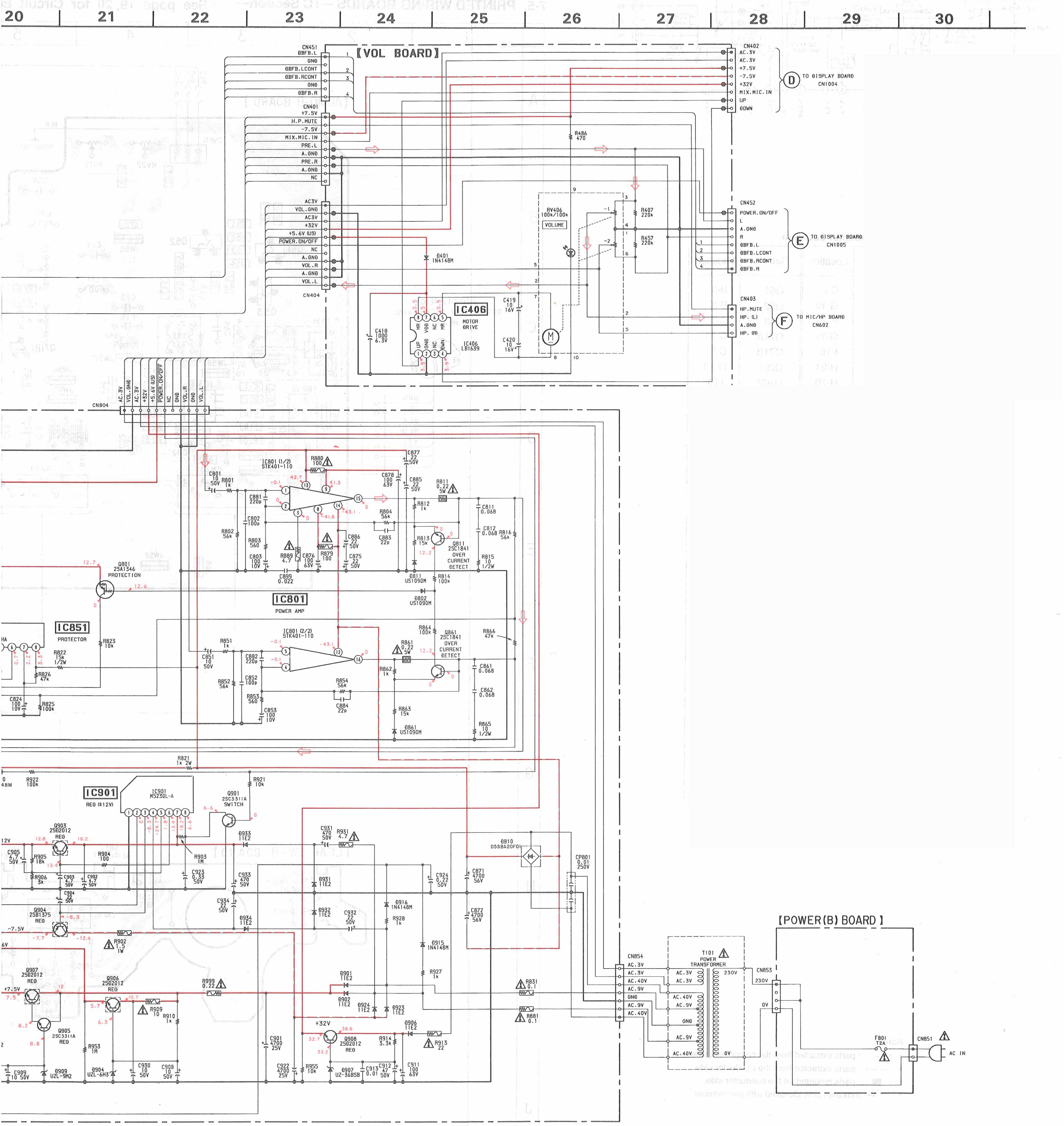
• IC302 MC14052BCP


VDD
X0
X1
X2
X3
XC
OPEN
Y0
Y1
Y2
Y3
YC
OPEN
A
B
DECODER
EN
VSS
VEE

• IC406 LB1639

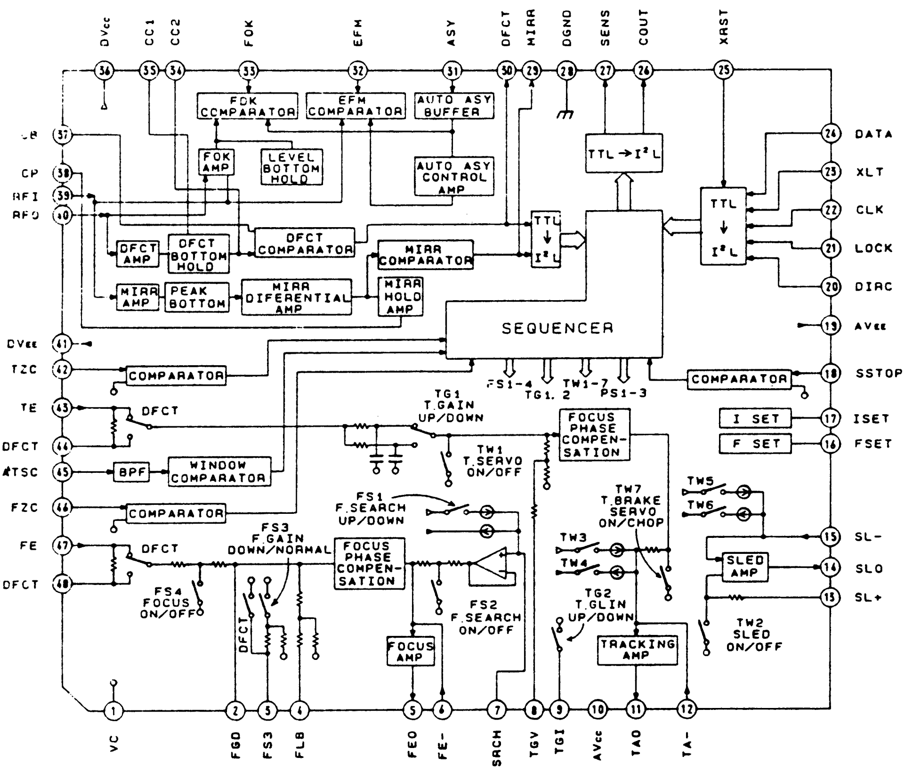

OUT2
VCC
OUT1
DRIVE CIRCUIT
INPUT LOGIC
IN1
GND
V CONT
IN2


15
16
17
18
19
20
21
22
23
24
25
26
CN205
AU.BUS
P.IN
KEY.1
KEY.2
NC
+5V (US)
D.GND
M.GND
TO TC BOARD CN408
CN206
REC.R
-7.5V
REC.L
+7.5V
PB.R
A.GND
PB.L
NC
TO TC BOARD CN407
CN207
KEY.REQ
DPCLK
D0
D1
D2
D3
AU-B
AU-BG
M.GND
+7.5V
NC (MUTE)
R.IN
A.GND
L.IN
D.GND
+5V
RST
TO BD BOARD CN103
CN201
CE
DI
CL
DO
STEREO
TUNED
S.SIG
D.GND
+5.6V (US)
TO DISPLAY BOARD CN1001
CN202
CD.OFF
F.MUTE
FUNC.B
FUNC.A
DBFB
CLK
S.SURR
TO DISPLAY BOARD CN1002
CN203
BACK.UP
TO DISPLAY BOARD CN1003
CN204
H.P.MUTE
MIX.MIC.IN
PRE.L
GND
PRE.R
CN251
DBFB.L
L.CONT
R.CONT
DBFB.R
CN901
CN902
M.GND
PRE.GND
SP.R
R.GND
L.GND
SP.L
+B
RY.CONT
0.GND
+5.6V (US)
+12V
P.IN
CN802
CN803
IC902
REG
IC902 LA5601
C953 1 50V
C954 220 16V
C952 1 50V
IC9001
RESET
IC9001 PST572E-T
D914 1N4148M
D921 1N4148M
R923 10k
Q9003 2SC3311A RESET
C9001 10 50V
Q237 2SC3311A MUTE INV. BUFFER
R2004 22k
R245 22k
Q233 2SA1309A MUTE INV. BUFFER
R236 1k
C228 10 50V
Q252 2SC3622A MUTE
R297 22k
R924 1 1/4W
R144 10
C141 100p
C142 100p
C140 1000 10V
CN451
DBFB.LCONT
DBFB.RCONT
DBFB.R
CN401
VOL BOARD
AC3V
VOL.GND
+32V
+5.6V (US)
POWER.ON/OFF
VOL.R
VOL.L
CN404
CN804
R486 470
RV406 100k/100k VOLUME
D401 1N4148M
IC406
MOTOR DRIVE
IC406 LB1639
C418 1000 6.3V
C419 10 16V
C420 10 16V
M
POWER(A) BOARD
IC801 (1/2) STK401-110
IC801 (2/2) STK401-110
IC801
POWER AMP
R880 100
C877 22 50V
C801 10 50V
R801 1k
C881 220p
C802 100p
R802 56k
R803 560
C803 100 10V
C899 0.022
R889 4.7
C876 100 63V
R879 100
C878 100 63V
C885 22 50V
R804 56k
C886 22 50V
C875 22 50V
C883 22p
R811 0.22 5W
R812 1k
R813 15k
Q811 2SC1841 OVER CURRENT DETECT
D811 US1090M
D802 US1090M
R814 100k
C811 0.068
C812 0.068
R816 56k
R815 10 1/2W
Q801 2SA1346 PROTECTION
IC851 μPC1237HA
IC851
PROTECTOR
R823 10k
R822 15k 1/2W
R826 47k
C821 220 6.3V
C822 220 6.3V
C824 100 10V
R825 100k
R824 18k
R851 1k
C851 10 50V
C882 220p
R852 56k
C852 100p
R853 560
C853 100 10V
R854 56k
C884 22p
R864 100k
Q861 2SC1841 OVER CURRENT DETECT
R861 0.22 5W
R862 1k
R863 15k
D861 US1090M
R866 47k
C861 0.068
C862 0.068
R865 10 1/2W
R821 1k 2W
D910 1N4148M
R922 100k
IC901
REG (±12V)
IC901 M5230L-A
R921 10k
Q901 2SC3311A SWITCH
Q903 2SD2012 REG
R907 15k
C905 4.7 50V
R905 18k
C916 4.7 50V
R906 3k
C903 4.7 50V
C902 4.7 50V
R904 100
R903 1M
C923 0.33 50V
D933 11E2
C931 470 50V
R931 4.7
C933 470 50V
C904 22 50V
C906 4.7 50V
R954 1M
R908 9.1k
Q904 2SB1375 REG
R902 7.5 1W
C934 22 50V
D934 11E2
D931 11E2
D932 11E2
C932 22 50V
D916 1N4148M
R928 1k
C924 0.22 50V
D810 D5SBA20FOI
C871 4700 56V
C872 4700 56V
CP801 0.01 250V
D915 1N4148M
Q907 2SD2012 REG
Q906 2SD2012 REG
R999 0.22
R909 10
R910 1k
C915 4.7 50V
Q905 2SC3311A REG
R952 1M
R953 1M
R911 1k
C909 10 50V
D909 UZL-9M2
D904 UZL-6H3
C930 10 50V
C908 10 50V
D901 11E2
D902 11E2
D924 11E2
D923 11E2
R927 1k
R831 0.1
R881 0.1
D906 11E2
Q908 2SD2012 REG
R914 3.3k
R913 22
C901 4700 25V
C922 4700 25V
R955 10k
D907 UZ-36BSB
C913 0.01
C912 47 50V
C911 100 63V
+32V
+7.5V
-7.5V
+5V
+5.6V
+12V


20
21
22
23
24
25
26
27
28
29
30
【VOL BOARD】
CN451
ØBFB.L
GND
ØBFB.LCONT
ØBFB.RCONT
GND
ØBFB.R
CN401
+7.5V
H.P.MUTE
-7.5V
MIX.MIC.IN
PRE.L
A.GND
PRE.R
A.GND
NC
AC3V
VOL.GND
AC3V
+32V
+5.6V (US)
POWER.ON/OFF
NC
A.GND
VOL.R
A.GND
VOL.L
CN404
CN402
AC.3V
AC.3V
+7.5V
-7.5V
+32V
MIX.MIC.IN
UP
DOWN
D
TO DISPLAY BOARD
CN1004
R486
470
RV406
100k/100k
VOLUME
R407
220k
R457
220k
CN452
POWER.ON/OFF
L
A.GND
R
ØBFB.L
ØBFB.LCONT
ØBFB.RCONT
ØBFB.R
E
TO DISPLAY BOARD
CN1005
D401
1N4148M
IC406
MOTOR DRIVE
IC406
LB1639
C418
1000
6.3V
C419
10
16V
C420
10
16V
M
CN403
HP.MUTE
HP. (L)
A.GND
HP. (R)
F
TO MIC/HP BOARD
CN602
CN804
AC.3V
VOL.GND
AC.3V
+32V
+5.6V (US)
POWER.ON/OFF
NC
GND
VOL.R
GND
VOL.L
IC801 (1/2)
STK401-110
R880
100
C877
22
50V
C801
10
50V
R801
1k
C878
100
63V
C885
22
50V
R811
0.22
5W
C881
220p
R812
1k
C811
0.068
C802
100p
R804
56k
C812
0.068
R816
56k
R802
56k
R803
560
R889
4.7
R879
100
C886
22
50V
C883
22p
R813
15k
Q811
2SC1841
OVER CURRENT DETECT
C803
100
10V
C876
100
63V
C875
22
50V
R815
10
1/2W
C899
0.022
D811
US1090M
R814
100k
Q801
2SA1346
PROTECTION
IC801
POWER AMP
D802
US1090M
IC851
PROTECTOR
R823
10k
R822
15k
1/2W
R826
47k
C824
100
10V
R825
100k
IC801 (2/2)
STK401-110
R851
1k
C851
10
50V
C882
220p
R864
100k
Q861
2SC1841
OVER CURRENT DETECT
R866
47k
R861
0.22
5W
R862
1k
C861
0.068
R852
56k
C852
100p
R854
56k
C862
0.068
R853
560
C853
100
10V
C884
22p
R863
15k
D861
US1090M
R865
10
1/2W
R821
1k 2W
R922
100k
IC901
REG (±12V)
IC901
M5230L-A
R921
10k
Q901
2SC3311A
SWITCH
Q903
2SD2012
REG
D933
11E2
R931
4.7
C931
470
50V
D810
D5SBA20FOI
+12V
C905
4.7
50V
R905
18k
R904
100
R903
1M
C923
0.33
50V
C933
470
50V
D931
11E2
C924
0.22
50V
C871
4700
56V
CP801
0.01
250V
R906
3k
C903
4.7
50V
C902
4.7
50V
C904
22
50V
C934
22
50V
D932
11E2
C932
22
50V
D916
1N4148M
R928
1k
C872
4700
56V
Q904
2SB1375
REG
D934
11E2
-7.5V
R902
1.5
1W
D915
1N4148M
【POWER(B) BOARD】
Q907
2SD2012
REG
Q906
2SD2012
REG
R999
0.22
D901
11E2
R927
1k
CN854
AC.3V
AC.3V
AC.40V
AC.9V
GND
AC.9V
AC.40V
T101
POWER TRANSFORMER
AC.3V
AC.3V
AC.40V
AC.9V
GND
AC.9V
AC.40V
230V
0V
CN853
230V
0V
R831
0.1
R881
0.1
+7.5V
R909
10
R910
1k
D902
11E2
D924
11E2
D923
11E2
Q905
2SC3311A
REG
+32V
Q908
2SD2012
REG
R914
3.3k
D906
11E2
R913
22
F801
T2A
CN851
AC IN
R953
1M
C901
4700
25V
C909
10
50V
D909
UZL-9H2
D904
UZL-6H3
C930
10
50V
C908
10
50V
C922
4700
25V
R955
10k
D907
UZ-36BSB
C913
0.01
C912
47
50V
C911
100
63V

• IC Block Diagrams

•IC101 CXA1372AQ (BD board)


DVcc
CC1
CC2
FOK
EFM
ASY
DFCT
MIRR
DGND
SENS
COUT
XRST
FOK COMPARATOR
EFM COMPARATOR
AUTO ASY BUFFER
FOK AMP
LEVEL BOTTOM HOLD
AUTO ASY CONTROL AMP
TTL→I²L
DFCT AMP
DFCT BOTTOM HOLD
DFCT COMPARATOR
MIRR COMPARATOR
MIRR AMP
PEAK BOTTOM
MIRR DIFERENTIAL AMP
MIRR HOLD AMP
SEQUENCER
DATA
XLT
CLK
LOCK
DIRC
AVcc
SSTOP
ISET
FSET
SL-
SLO
SL+
CP
RFI
RFO
DVcc
TZC
TE
TDFCT
ATSC
FZC
FE
FDFCT
COMPARATOR
DFCT
BPF
WINDOW COMPARATOR
TG1 T.GAIN UP/DOWN
TW1 T.SERVO ON/OFF
FOCUS PHASE COMPENSATION
I SET
F SET
FS1 F.SEARCH UP/DOWN
FS3 F.GAIN DOWN/NORMAL
TW7 T.BRAKE SERVO ON/CHOP
TW5
TW6
TW3
TW4
SLED AMP
FS4 FOCUS ON/OFF
FS2 F.SEARCH ON/OFF
TG2 T.GLIN UP/DOWN
TW2 SLED ON/OFF
FOCUS AMP
TRACKING AMP
FS1-4
TG1, 2
TW1-7
PS1-3
VC
FGD
FS3
FLB
FEO
FE-
SRCH
TGV
TGI
AVcc
TAO
TA-

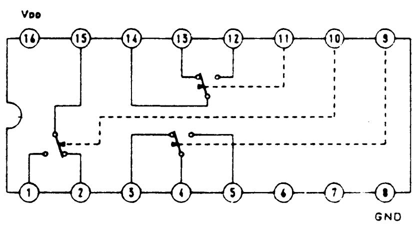
• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D31	C-2	Q51	B-3
D401	G-18	Q52	B-3
D403	F-19	Q53	C-3
D404	G-19	Q71A	C-11
D405	I-16	Q71B	C-5
D407	H-21	Q201	G-20
D410	H-20	Q202	J-21
D411	G-16	Q301	G-20
D416	H-17	Q302	J-22
D1501	A-20	Q401	F-17
D1502	A-20	Q402	G-18
D1503	A-22	Q403	G-18
D1504	A-23	Q404	F-19
D1506	A-15	Q405	H-16
D1507	A-17	Q406	I-18
D1508	A-17	Q407	H-17
D1509	A-15	Q408	I-18
D4001	I-16	Q409	F-19
		Q410	F-19
IC31A	D-9	Q411	F-21
IC31B	D-3	Q412	G-20
IC81A	I-11	Q414	H-17
IC81B	I-5	Q415	I-18
IC201	G-21		
IC202	I-20		
IC203	I-21		
IC204	I-21		
IC205	H-19		
IC401	G-17		
IC402	F-17		
IC403	H-21		
IC404	G-15		
IC415	H-18		

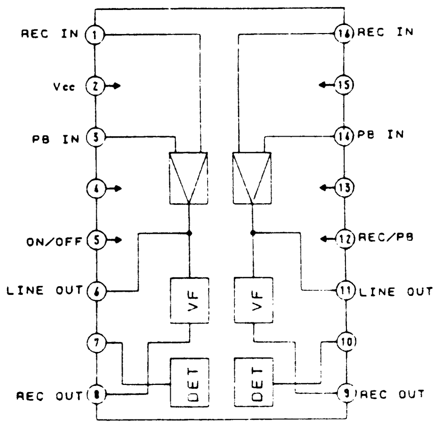
Note:

- ○—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ⌐⌐ indicates side identified with part number.

•IC201 MC14053BF



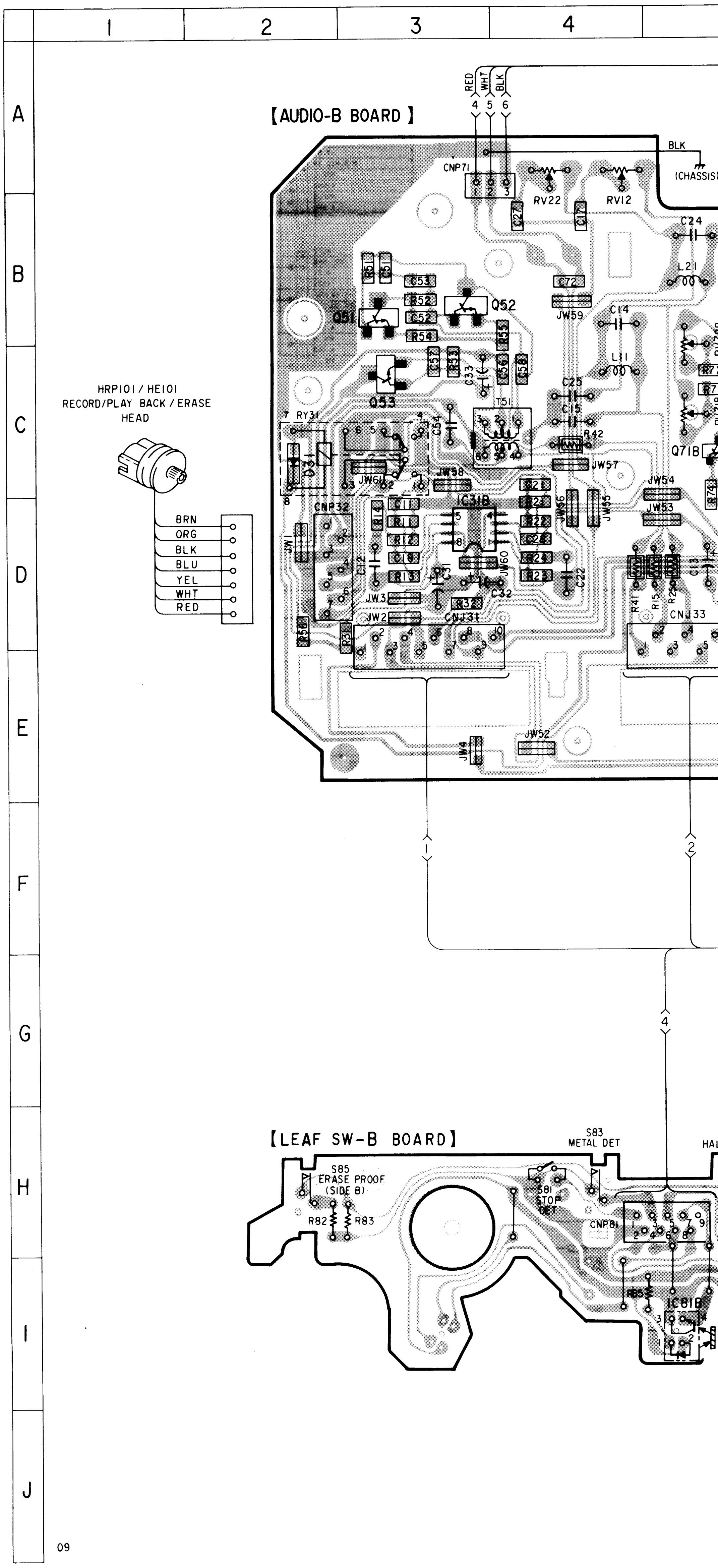
•IC202 CXA1101M


REC IN
Vcc
PB IN
ON/OFF
LINE OUT
REC OUT
REC/PB
VF
DET

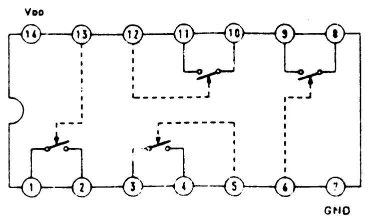
•IC

7-5. PRINTED WIRING BOARDS —TC Section—

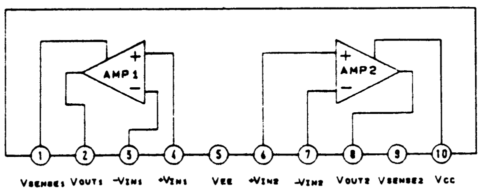
• See page 19, 20 for Circuit


1
2
3
4
A
B
C
D
E
F
G
H
I
J
【AUDIO-B BOARD】
RED
WHT
BLK
CNP71
RV22
RV12
BLK
(CHASSIS)
C24
L21
C72
C14
L11
Q51
Q52
Q53
C53
R52
C52
R54
C57
R53
C33
C56
R55
T51
C25
C15
R42
RY31
D31
JW61
JW58
JW57
Q71B
JW54
JW53
CNP32
IC31B
JW1
JW3
JW2
JW60
C32
CNJ31
CNJ33
JW52
JW4
HRP101 / HE101
RECORD/PLAY BACK / ERASE HEAD
BRN
ORG
BLK
BLU
YEL
WHT
RED
【LEAF SW-B BOARD】
S83
METAL DET
S85
ERASE PROOF (SIDE B)
R82
R83
S81
STOP DET
CNP81
R85
IC81B
09

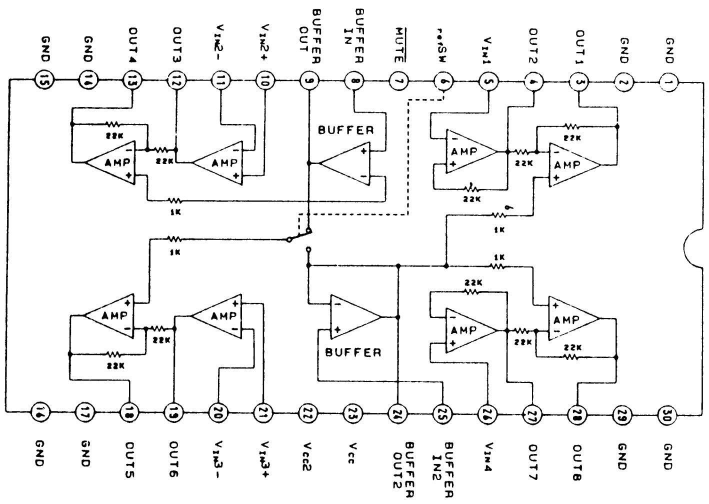
•IC204 CD4066BCM


VDD
14
13
12
11
10
9
8
1
2
3
4
5
6
7
GND

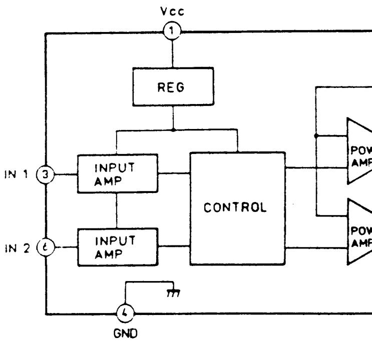
•IC402 TA7272P


AMP 1
AMP2
VSENSE1
VOUT1
-VIN1
+VIN1
VEE
+VIN2
-VIN2
VOUT2
VSENSE2
VCC

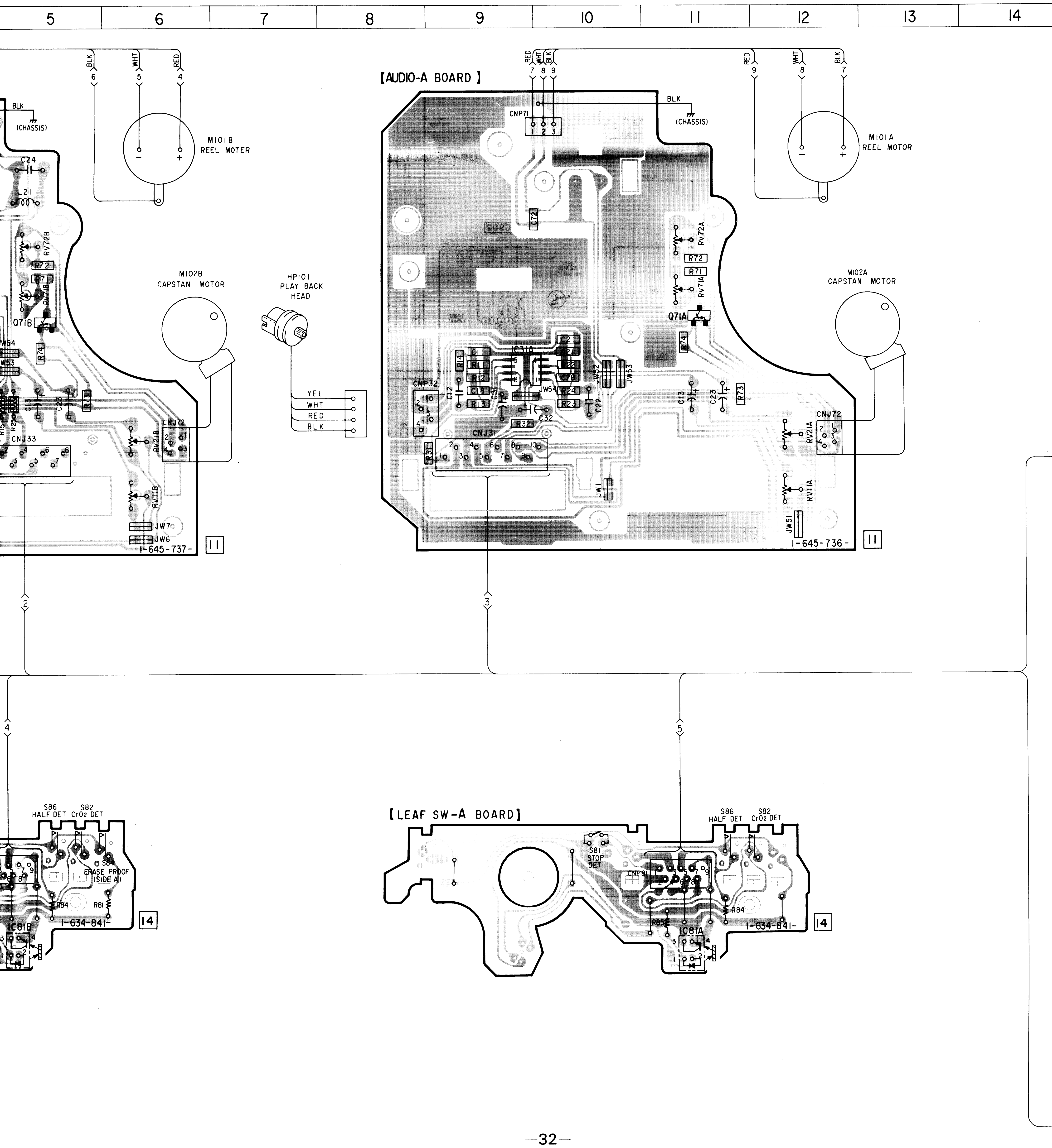
•IC102 LA6525M (BD board)


GND
GND
OUT4
OUT3
Vin2-
Vin2+
BUFFER OUT
BUFFER IN
MUTE
SW
Vin1
OUT2
OUT1
GND
GND
BUFFER
AMP
22K
1K
BUFFER
GND
GND
OUT5
OUT6
Vin3-
Vin3+
Vcc2
Vcc
BUFFER OUT2
BUFFER IN2
Vin4
OUT7
OUT8
GND
GND

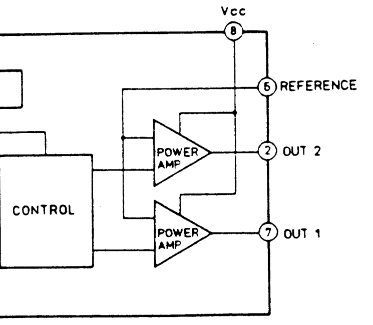
•IC103 M54641FP (BD board


Vcc
REG
IN 1
INPUT AMP
CONTROL
IN 2
INPUT AMP
GND

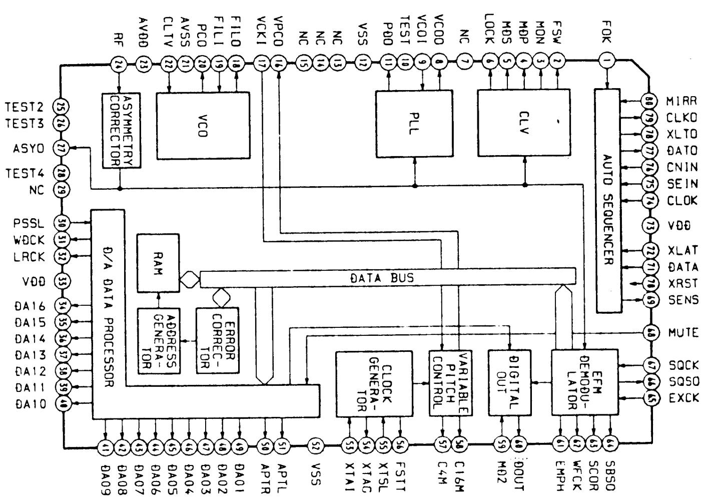
Circuit Boards Location and Semiconductor Lead Layouts.


5
6
7
8
9
10
11
12
13
14
BLK
WHT
RED
6
5
4
BLK
(CHASSIS)
M101B
REEL MOTER
C24
L21
RV72B
R72
R71
RV71B
Q71B
JW54
JW53
R74
C13
C23
R73
CNJ33
CNJ72
RV21B
RV11B
JW7
JW6
1-645-737-
11
M102B
CAPSTAN MOTOR
HP101
PLAY BACK
HEAD
YEL
WHT
RED
BLK
[AUDIO-A BOARD]
RED
WHT
BLK
7
8
9
CNP71
BLK
(CHASSIS)
C72
RED
WHT
BLK
9
8
7
M101A
REEL MOTOR
RV72A
R72
R71
RV71A
Q71A
R74
M102A
CAPSTAN MOTOR
C21
R21
R22
C28
R24
R23
C22
IC31A
C11
R11
R14
C18
R12
R13
C12
C31
C32
R32
JW54
JW52
JW53
CNP32
CNJ31
R31
C13
C23
R73
CNJ72
RV21A
RV11A
JW1
JW51
1-645-736-
11
2
3
4
5
S86
HALF DET
S82
CrO2 DET
S84
ERASE PROOF
(SIDE A)
R84
R81
1-634-841-
IC81B
14
[LEAF SW-A BOARD]
S86
HALF DET
S82
CrO2 DET
S81
STOP
DET
CNP81
R84
R85
IC81A
1-634-841-
14

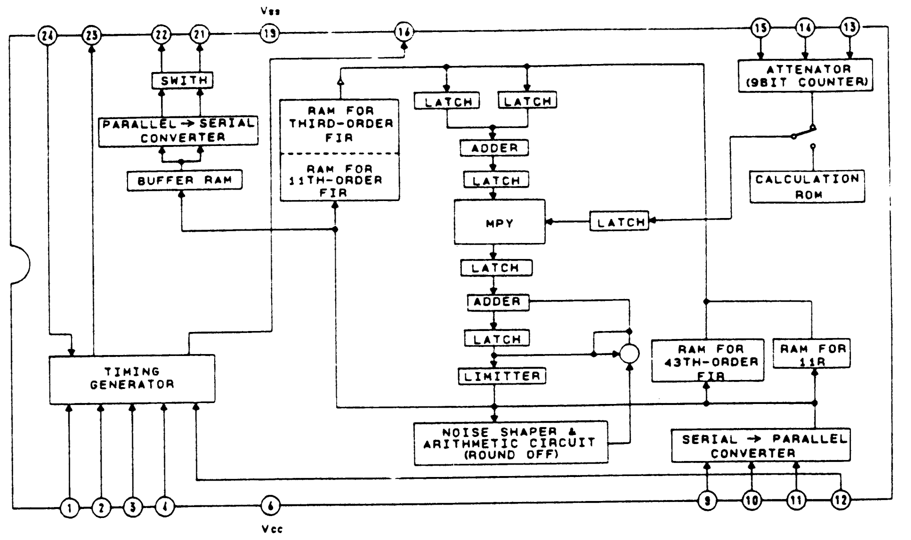
1FP (BD board)


Vcc
REFERENCE
OUT 2
OUT 1
POWER AMP
POWER AMP
CONTROL

•IC201 CXD2500BQ (BD board)

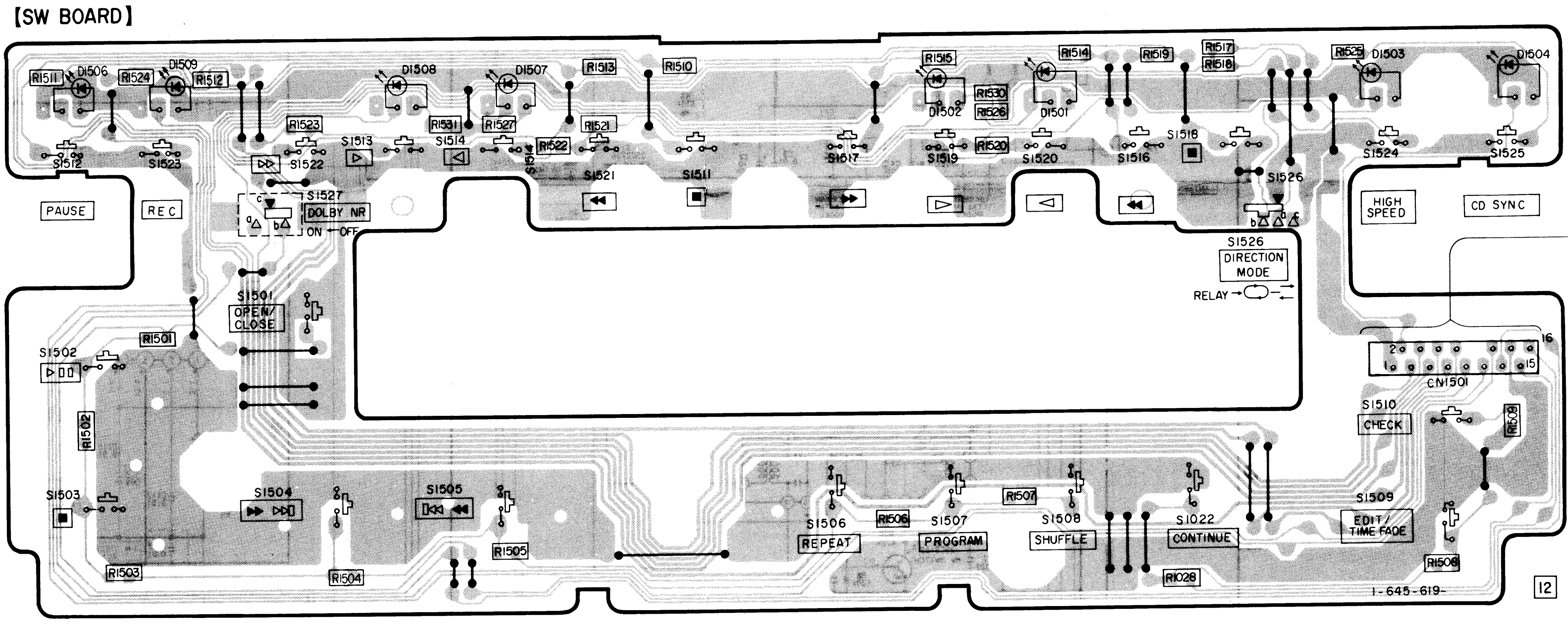

RF
AVDD
CLTV
AVSS
PCO
FILO
FILI
VCKI
VPCO
NC
VSS
PBD
TEST
VCOI
VCDO
LOCK
MDS
MDP
MON
FSW
FOK
MIRR
CLKO
XLTO
DATO
CNIN
SEIN
CLOK
VDD
XLAT
DATA
XRST
SENS
MUTE
SQCK
SQSO
EXCK
TEST2
TEST3
ASYO
TEST4
PSSL
WDCK
LRCK
DA16
DA15
DA14
DA13
DA12
DA11
DA10
DA09
DA08
DA07
DA06
DA05
DA04
DA03
DA02
DA01
APTR
APTL
XTAI
XTAO
XTSL
FSTT
C4M
C16M
MD2
DOUT
EMPH
WFCK
SCOR
SBSO
ASYMMETRY CORRECTOR
VCO
PLL
CLV
AUTO SEQUENCER
D/A DATA PROCESSOR
RAM
ADDRESS GENERATOR
ERROR CORRECTOR
DATA BUS
CLOCK GENERATOR
VARIABLE PITCH CONTROL
DIGITAL OUT
EFM DEMODULATOR

•IC203 MSM6538-01GS (BD board)

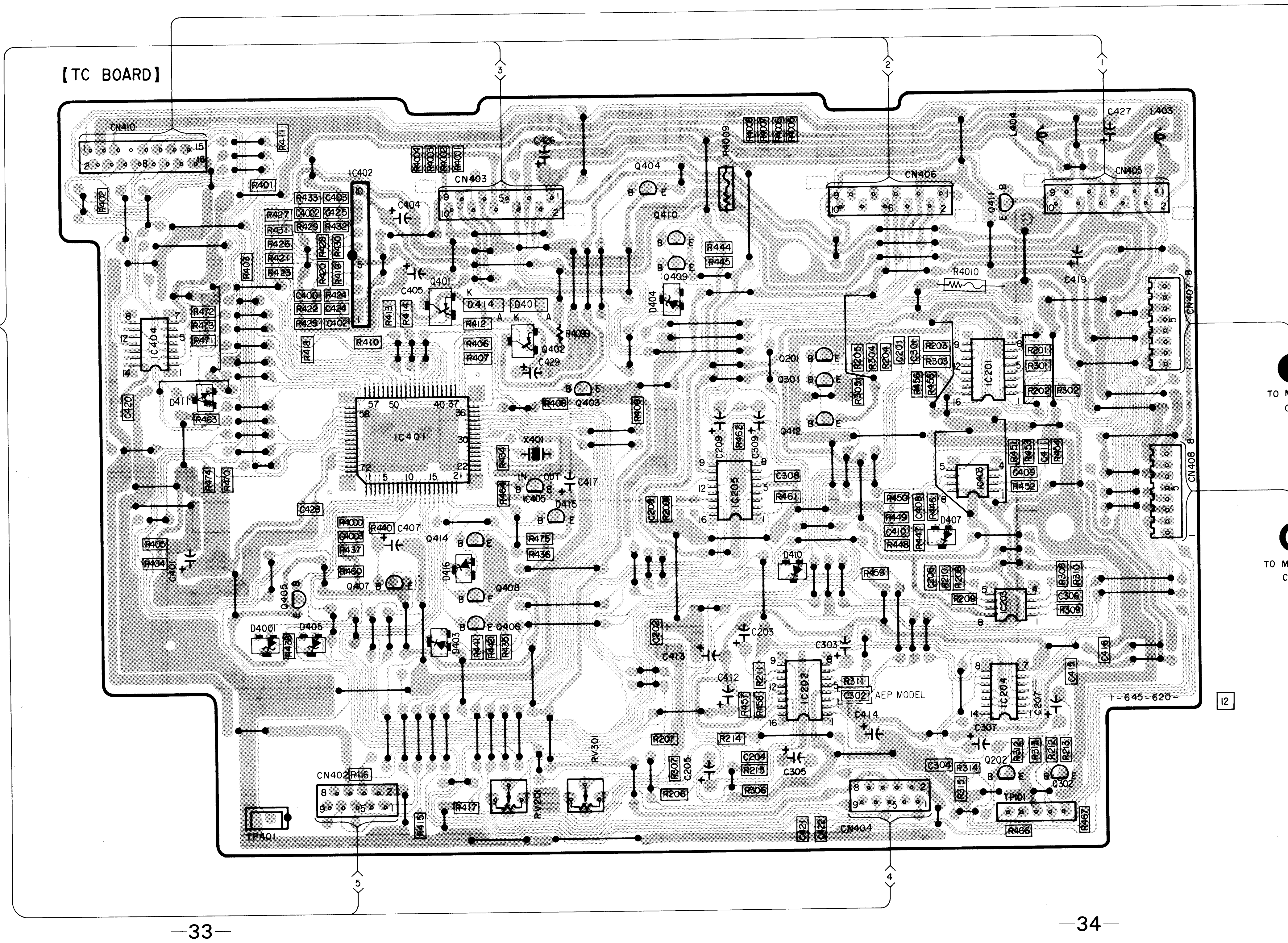

VSS
SWITH
PARALLEL → SERIAL CONVERTER
BUFFER RAM
RAM FOR THIRD-ORDER FIR
RAM FOR 11TH-ORDER FIR
LATCH
ADDER
MPY
LIMITTER
NOISE SHAPER & ARITHMETIC CIRCUIT (ROUND OFF)
ATTENATOR (9BIT COUNTER)
CALCULATION ROM
RAM FOR 43TH-ORDER FIR
RAM FOR 11R
SERIAL → PARALLEL CONVERTER
TIMING GENERATOR
Vcc

14	15	16	17	18	19	20	21	22	23

【SW BOARD】

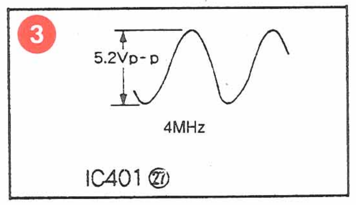

PAUSE
REC
S1527 DOLBY NR ON OFF
S1501 OPEN/CLOSE
S1502
S1503
S1504
S1505
S1506 REPEAT
S1507 PROGRAM
S1508 SHUFFLE
S1022 CONTINUE
S1509 EDIT/TIME FADE
S1510 CHECK
S1526 DIRECTION MODE
RELAY
HIGH SPEED
CD SYNC
CN1501
D1501
D1502
D1503
D1504
D1506
D1507
D1508
D1509
S1511
S1512
S1513
S1514
S1516
S1517
S1518
S1519
S1520
S1521
S1522
S1523
S1524
S1525
1-645-619-
12

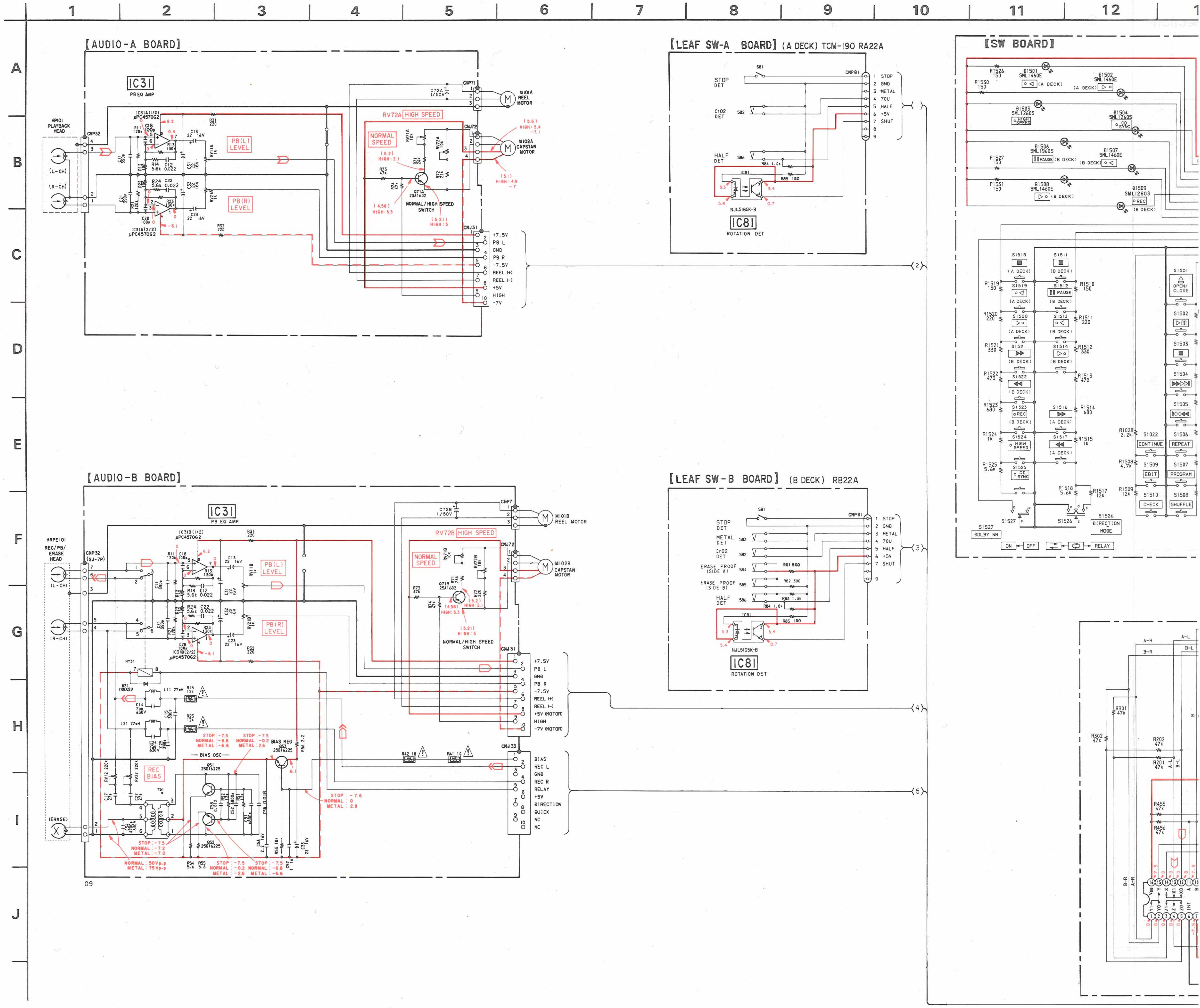
【TC BOARD】


CN410
CN402
CN403
CN404
CN405
CN406
CN407
CN408
IC401
IC402
IC403
IC404
IC405
IC201
IC202
IC203
IC204
IC205
X401
RV201
RV301
TP401
TP101
L403
L404
AEP MODEL
1-645-620-
12
TO M
1
2
3
4
5

7-6. SCHEMATIC DIAGRAMS —TC Section—

- **Wave forms**

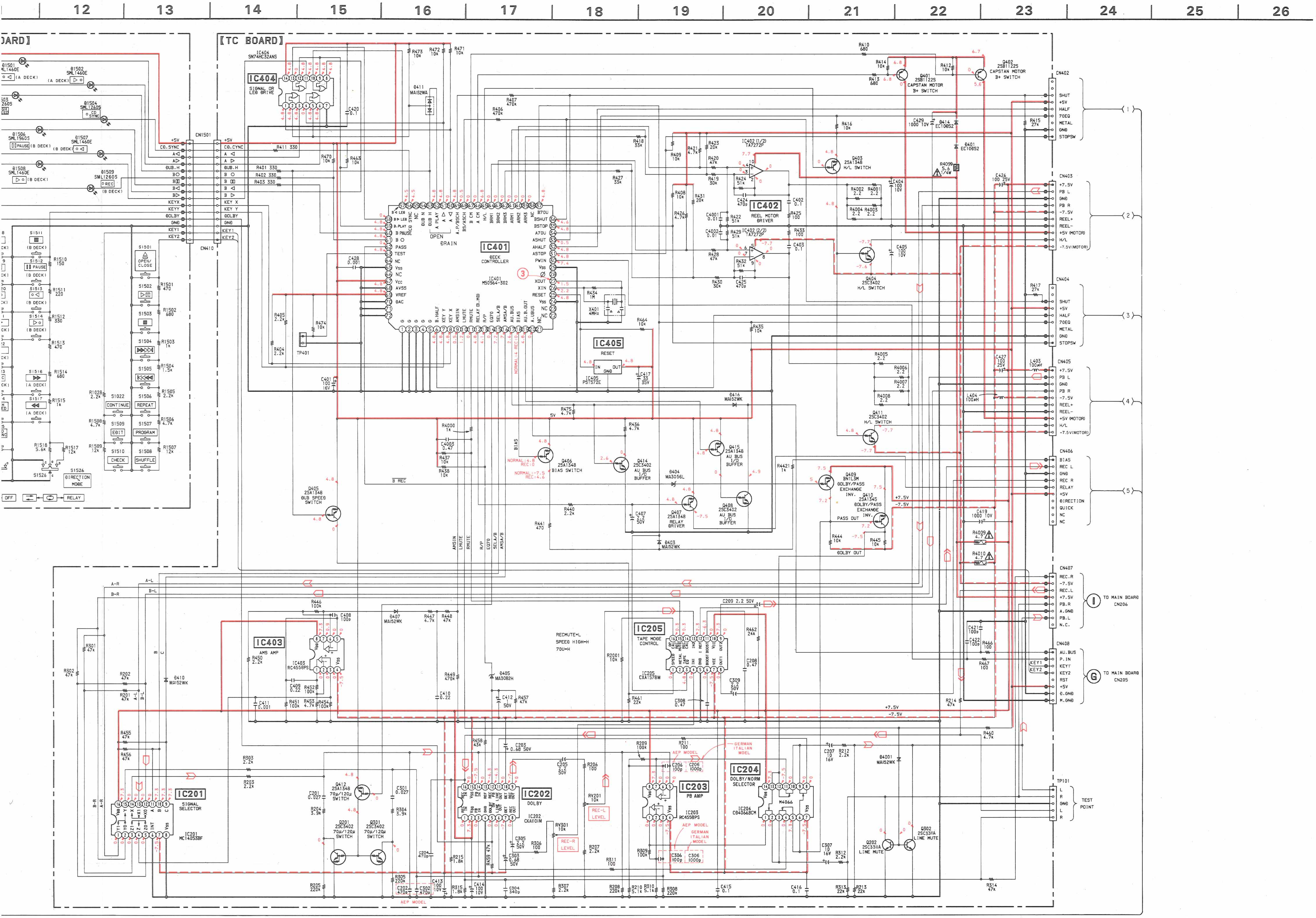



[AUDIO-A BOARD]
IC31
PB EQ AMP
HP101 PLAYBACK HEAD
PB(L) LEVEL
PB(R) LEVEL
RV72A HIGH SPEED
NORMAL SPEED
NORMAL/HIGH SPEED SWITCH
M101A REEL MOTOR
M102A CAPSTAN MOTOR
[LEAF SW-A BOARD] (A DECK) TCM-190 RA22A
IC81 ROTATION DET
[SW BOARD]
[AUDIO-B BOARD]
HRPE101 REC/PB/ERASE HEAD
REC BIAS
BIAS OSC
RV72B HIGH SPEED
M101B REEL MOTOR
M102B CAPSTAN MOTOR
[LEAF SW-B BOARD] (B DECK) RB22A
IC81 ROTATION DET

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ▨ : nonflammable resistor.
- ⏛ : fusible resistor.
- ▬ : B+Line
- ▬ ▬ ▬ : B-Line
- ☐ : adjustment for repair.
- Readings are taken with a non-signal.
- Voltages are taken with a VOM (Input Impedance 10MΩ) Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - ⮚ : PB(DECK A) ⮚ : REC(DECK B)
  - ▷ : PB(DECK B)


12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
【TC BOARD】
IC404
SN74HC32ANS
SIGNAL OR
LEB BRIVE
IC401
BECK
CONTROLLER
IC401
M50964-302
IC402
REEL MOTOR
BRIVER
IC402 (1/2)
TA7272P
IC402 (2/2)
TA7272P
IC405
RESET
IC405
PST572E
X401
4MHz
TP401
Q401
2SB1122S
CAPSTAN MOTOR
B+ SWITCH
Q402
2SB1122S
CAPSTAN MOTOR
B+ SWITCH
Q403
2SA1348
H/L SWITCH
Q404
2SC3402
H/L SWITCH
Q405
2SA1348
BUB SPEEB
SWITCH
Q406
2SA1348
BIAS SWITCH
Q407
2SA1348
RELAY
BRIVER
Q408
2SC3402
AU BUS
1/O
BUFFER
Q409
BN1L3M
BOLBY/PASS
EXCHANGE
INV.
Q410
2SA1345
BOLBY/PASS
EXCHANGE
INV.
Q411
2SC3402
H/L SWITCH
Q414
2SC3402
AU BUS
1/O
BUFFER
Q415
2SA1348
AU BUS
1/O
BUFFER
PASS OUT
BOLBY OUT
CN402
SHUT
+5V
HALF
70EQ
METAL
GNB
STOPSW
CN403
+7.5V
PB L
GNB
PB R
-7.5V
REEL+
REEL-
+5V (MOTOR)
H/L
-7.5V(MOTOR)
CN404
CN405
CN406
BIAS
REC L
GNB
REC R
RELAY
+5V
BIRECTION
QUICK
NC
NC
CN407
REC.R
-7.5V
REC.L
+7.5V
PB.R
A.GNB
PB.L
N.C.
TO MAIN BOARB
CN206
CN408
AU.BUS
P.IN
KEY1
KEY2
RST
+5V
B.GNB
M.GNB
TO MAIN BOARB
CN205
CN1501
CN410
S1501
OPEN/
CLOSE
CONTINUE
REPEAT
EDIT
PROGRAM
CHECK
SHUFFLE
BIRECTION
MOBE
RELAY
PAUSE
IC403
AMS AMP
IC403
RC4558PS
IC205
TAPE MOBE
CONTROL
IC205
CXA1578M
RECMUTE=L
SPEEB HIGH=H
70U=H
IC201
SIGNAL
SELECTOR
IC201
MC14053BF
IC202
BOLBY
IC202
CXA1101M
IC203
PB AMP
IC203
RC4558PS
IC204
BOLBY/NORM
SELECTOR
IC204
CB4066BCM
Q412
2SA1348
70μ/120μ
SWITCH
Q201
2SC3402
70μ/120μ
SWITCH
Q301
2SC3402
70μ/120μ
SWITCH
Q202
2SC3311A
LINE MUTE
Q302
2SC3311A
LINE MUTE
REC-L
LEVEL
REC-R
LEVEL
AEP MODEL
GERMAN
ITALIAN
MODEL
TP101
TEST
POINT

7-7. PRINTED WIRING BOARDS —DISPLAY/CD Section—

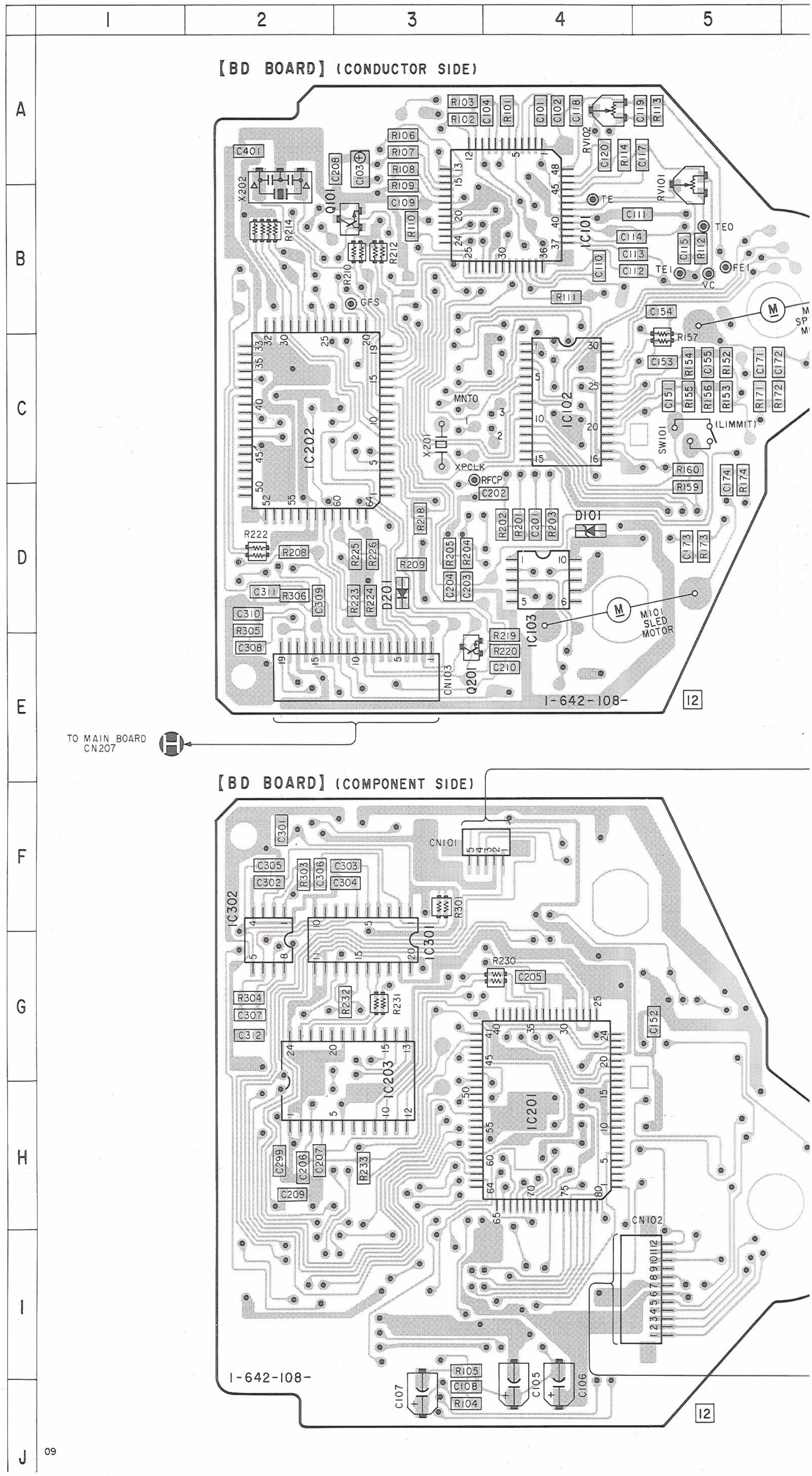
• See page 1

• Semiconductor Location

Ref. No.	Location
D101	D-4
D201	D-3
D1001	B-9
D1002	D-10
D1004	B-17
D1005	B-9
D1007	E-10
D1030	D-11
D1031	D-12
D1051	D-10
D1052	D-11
D1053	D-11
D1054	D-11
D1055	D-12
D1058	D-9
D1059	E-9
IC101	B-4
IC102	C-4
IC103	D-4
IC106	B-15
IC201	H-4
IC202	C-2
IC203	H-3
IC301	G-3
IC302	F-2
IC501	E-14
IC602	G-17
IC1001	B-14
IC1002	B-10
IC1003	E-11
IC1004	D-11
IC1005	B-16
IC1006	B-12
IC1007	B-11
Q101	B-2
Q201	G-3
Q601	D-13
Q602	I-18
Q1001	E-10
Q1002	D-10
Q1003	D-10
Q1051	C-16

Note:

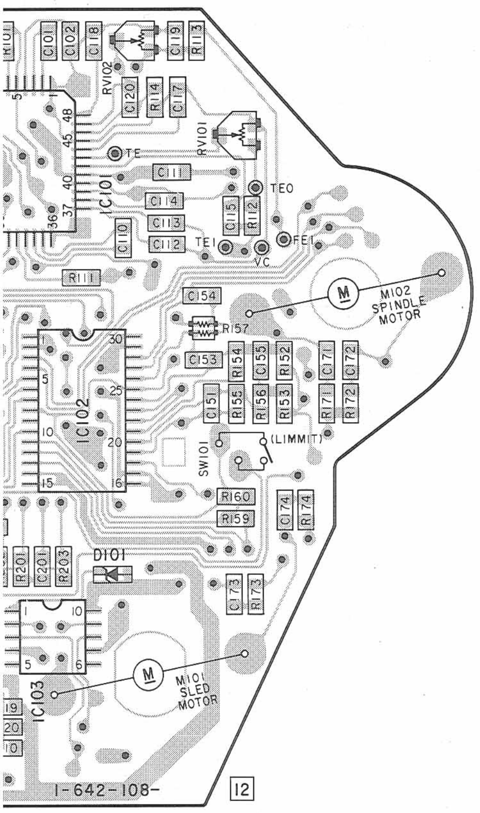
- o—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ⬚⊸ indicates side identified with part number.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ▨ : Pattern of the rear side.

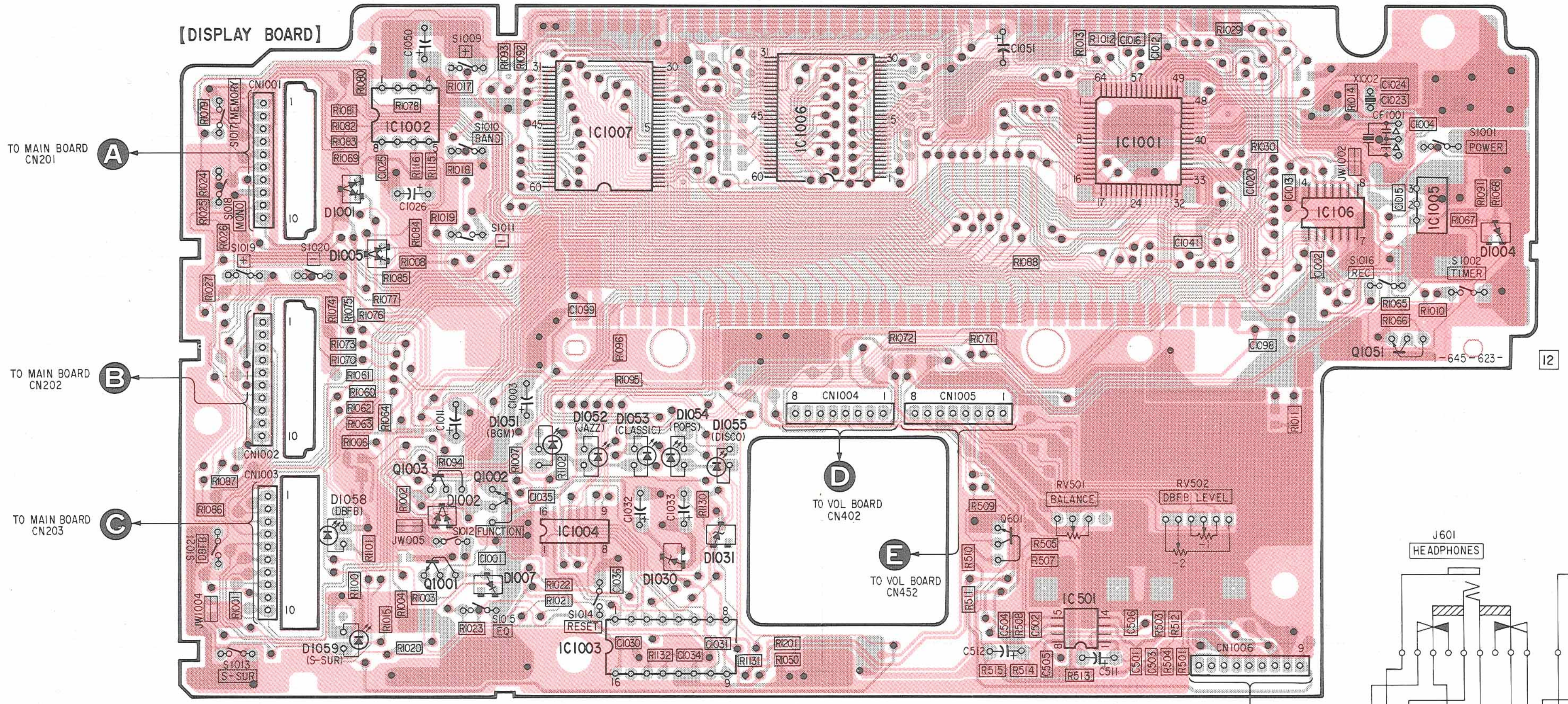


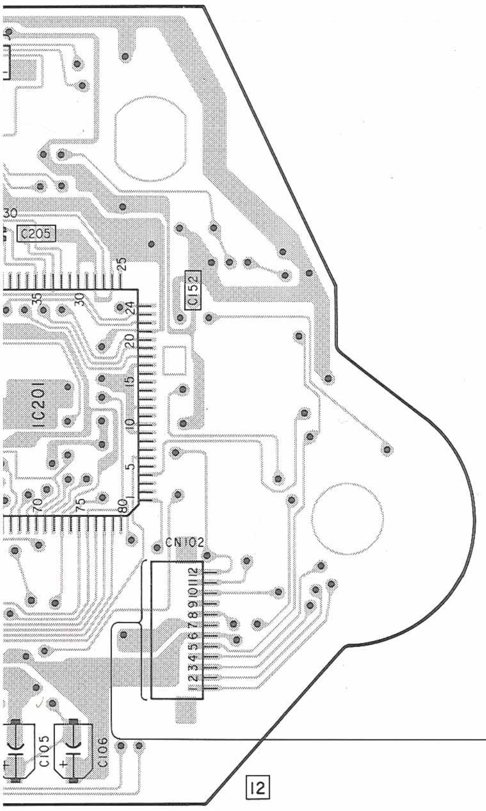
1
2
3
4
5
A
B
C
D
E
F
G
H
I
J
[BD BOARD] (CONDUCTOR SIDE)
IC101
IC102
IC103
IC202
Q101
Q201
D101
D201
X201
X202
RV101
RV102
TE
TEO
FEI
FE
GFS
MNTO
XPCLK
RFCP
SW101 (LIMMIT)
M101 SLED MOTOR
CN103
1-642-108-
12
TO MAIN BOARD CN207
H
[BD BOARD] (COMPONENT SIDE)
CN101
CN102
IC201
IC203
IC301
IC302
1-642-108-
12
09

• See page 19, 20 for Circuit Boards Location and Semiconductor Lead Layouts.

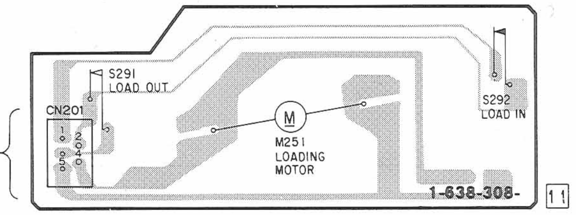
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19


IC101
IC102
IC103
M102 SPINDLE MOTOR
M101 SLED MOTOR
SW101 (LIMMIT)
D101
RV101
RV102
TE
TEO
FE
VC
1-642-108-
12

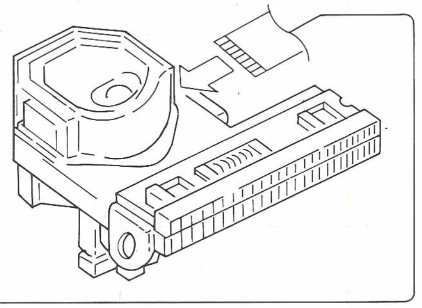

[DISPLAY BOARD]
TO MAIN BOARD CN201
A
TO MAIN BOARD CN202
B
TO MAIN BOARD CN203
C
CN1001
CN1002
CN1003
IC1001
IC1002
IC1003
IC1004
IC1005
IC1006
IC1007
IC106
S1001 POWER
S1002 TIMER
S1007 MEMORY
S1010 BAND
S1012 FUNCTION
S1013 S-SUR
S1014 RESET
S1015 EQ
S1016 REC
D1051 (BGM)
D1052 (JAZZ)
D1053 (CLASSIC)
D1054 (POPS)
D1055 (DISCO)
D1058 (DBFB)
D1059 (S-SUR)
CN1004
CN1005
CN1006
TO VOL BOARD CN402
D
TO VOL BOARD CN452
E
RV501 BALANCE
RV502 DBFB LEVEL
IC501
Q1001
Q1002
Q1003
Q1051
1-645-623-
12

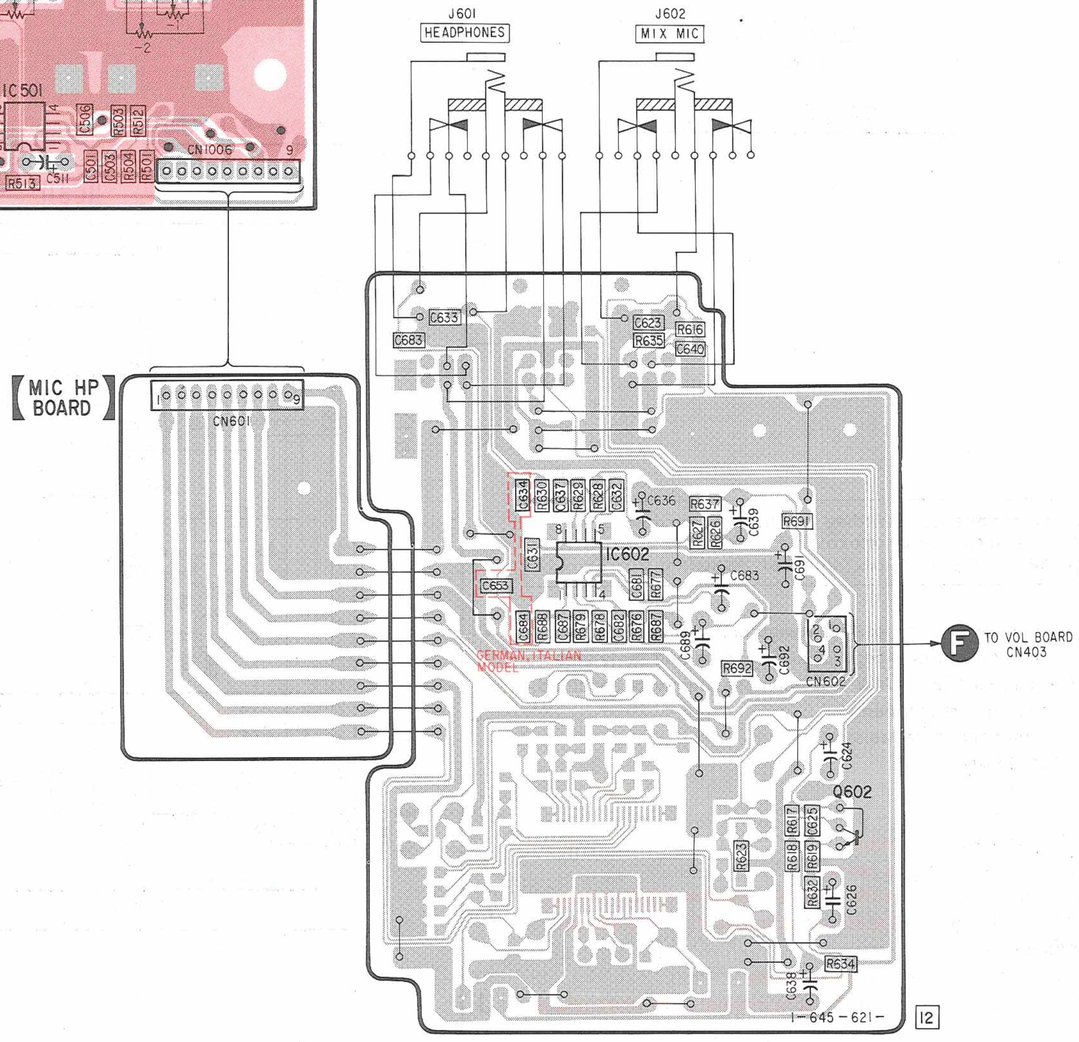

IC201
CN102
12

[LOADING BOARD]


CN201
S291 LOAD OUT
S292 LOAD IN
M251 LOADING MOTOR
1-638-308-
11

OPTICAL PICK-UP BLOCK (KSS-240A)

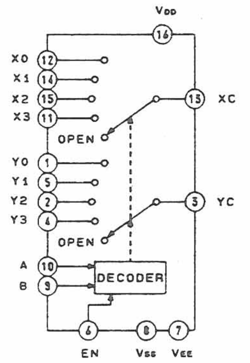



J601 HEADPHONES
J602 MIX MIC
[MIC HP BOARD]
CN601
IC602
Q602
CN602
GERMAN, ITALIAN MODEL
TO VOL BOARD CN403
F
1-645-621-
12

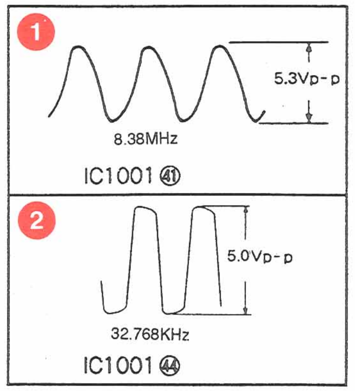
7-8. SCHEMATIC DIAGRAMS —DISPLAY Section—

• IC Block Diagrams

• IC1004 CD4052BCM


VDD
16
X0 12
X1 14
X2 15
X3 11
OPEN
13 XC
Y0 1
Y1 5
Y2 2
Y3 4
OPEN
3 YC
A 10
B 9
DECODER
6
8
7
EN
VSS
VEE

• Wave forms

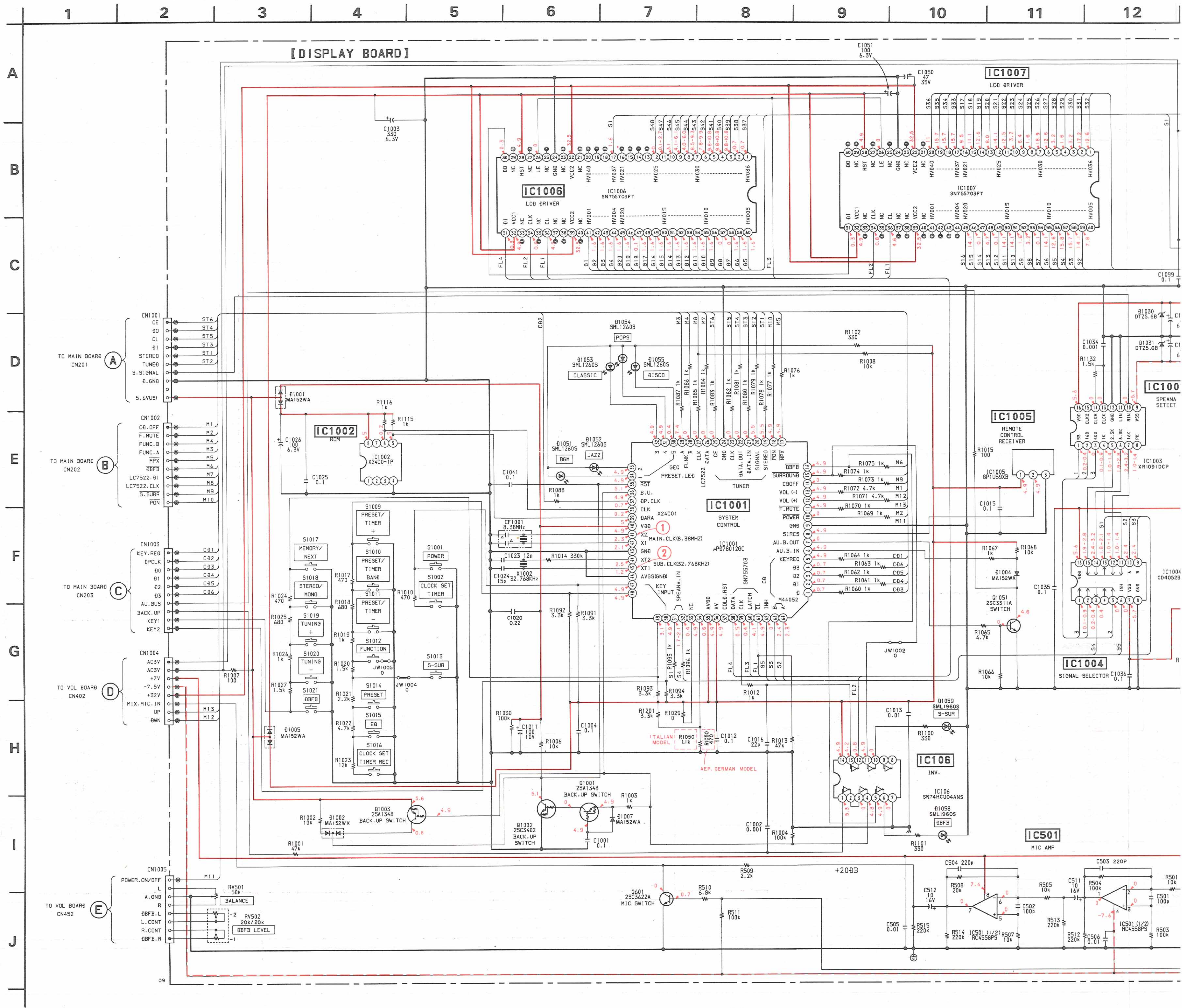


Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- : nonflammable resistor.
- : fusible resistor.
- ━━ : B+Line
- ▬ ▬ : B-Line
- ▭ : adjustment for repair.
- Readings are taken with a non-signal.
- Voltages are taken with a VOM (Input Impedance 10MΩ) Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.

  ⇨ : FM


1
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7
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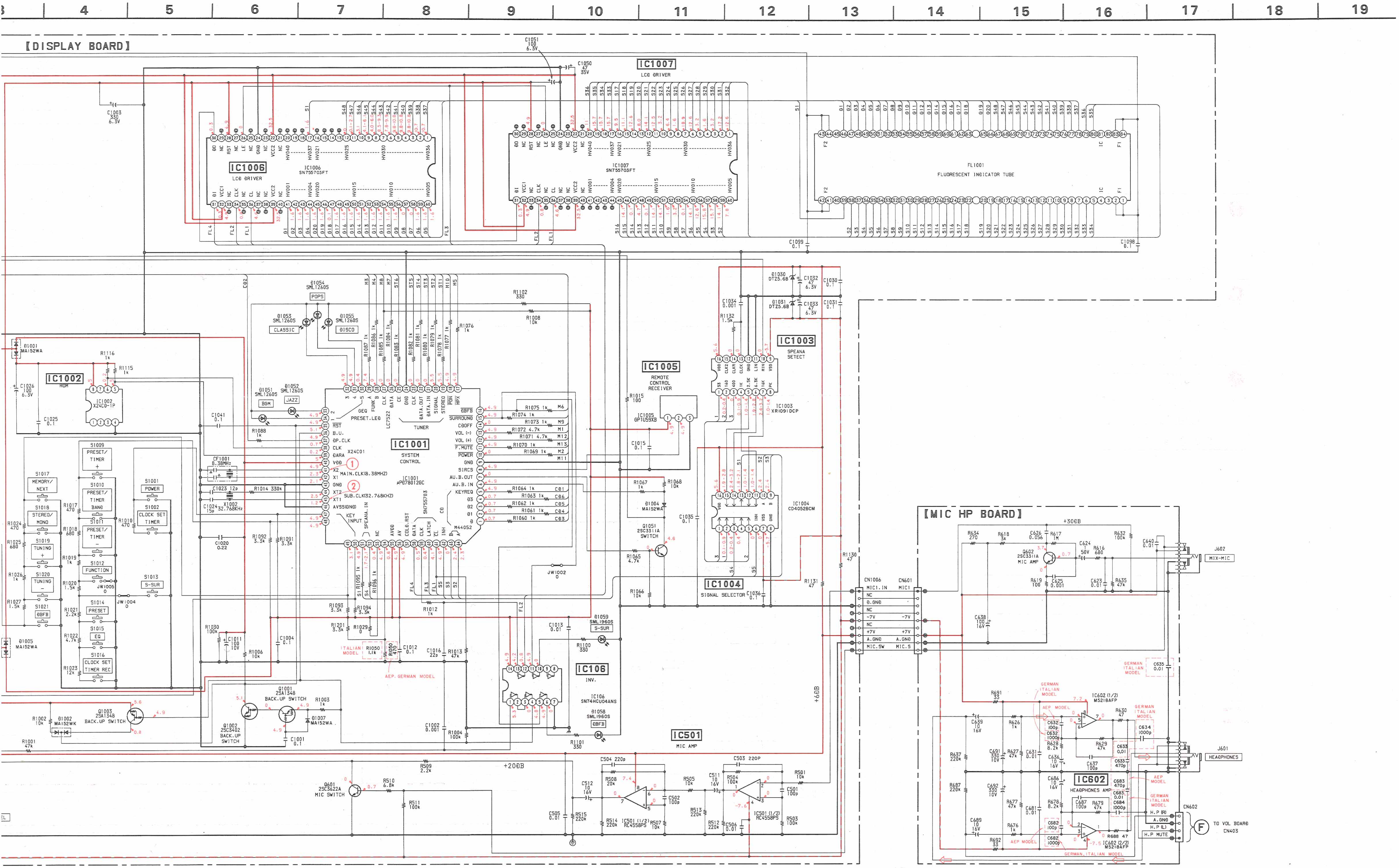
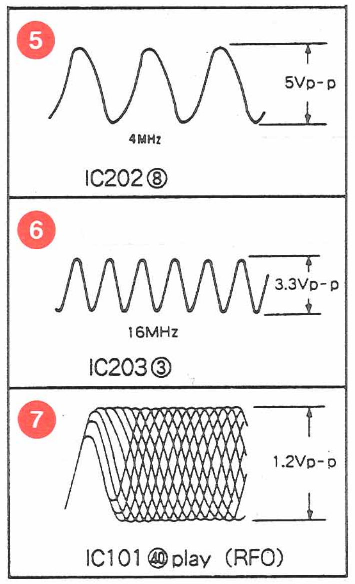
11
12
A
B
C
D
E
F
G
H
I
J
【DISPLAY BOARD】
IC1006 LCD DRIVER SN75570FT
IC1007 LCD DRIVER SN75570FT
IC1001 SYSTEM CONTROL μPD78012GC
IC1002 ROM X24C01P
IC1003 SPEANA SELECT XR1091CP
IC1004 SIGNAL SELECTOR CD4052B
IC1005 REMOTE CONTROL RECEIVER GP1U59XB
IC106 INV. SN74HCU04ANS
IC501 MIC AMP RC4558PS
TO MAIN BOARD CN201 Ⓐ CN1001
TO MAIN BOARD CN202 Ⓑ CN1002
TO MAIN BOARD CN203 Ⓒ CN1003
TO VOL BOARD CN402 Ⓓ CN1004
TO VOL BOARD CN452 Ⓔ CN1005
Q1001 2SA1348 BACK.UP SWITCH
Q1002 2SC3402 BACK.UP SWITCH
Q1003 2SA1348 BACK.UP SWITCH
Q1051 2SC3311A SWITCH
Q601 2SC3622A MIC SWITCH
X1001 8.38MHz
X1002 32.768KHz
MAIN.CLK(8.38MHZ) ①
SUB.CLK(32.768KHZ) ②
S1001 POWER
S1002 CLOCK SET TIMER
S1009 PRESET/TIMER +
S1010 PRESET/TIMER BAND
S1011 PRESET/TIMER −
S1012 FUNCTION
S1013 S-SUR
S1014 PRESET
S1015 EQ
S1016 CLOCK SET TIMER REC
S1017 MEMORY/NEXT
S1018 STEREO/MONO
S1019 TUNING +
S1020 TUNING −
S1021 DBFB
RV501 50k BALANCE
RV502 20k/20k DBFB LEVEL
ITALIAN MODEL
AEP, GERMAN MODEL
+20DB


【DISPLAY BOARD】
【MIC HP BOARD】
IC1006 LCD DRIVER SN755703FT
IC1007 LCD DRIVER SN755703FT
FL1001 FLUORESCENT INDICATOR TUBE
IC1001 SYSTEM CONTROL µPD78012OC
IC1002 ROM X24C01-1P
IC1003 SPEANA SETECT XR1091DCP
IC1004 SIGNAL SELECTOR CD4052BCM
IC1005 REMOTE CONTROL RECEIVER GP1U59XB
IC106 INV. SN74HCU04ANS
IC501 MIC AMP RC4558PS
IC602 HEADPHONES AMP M5218AFP
MAIN.CLK(8.38MHZ)
SUB.CLK(32.768KHZ)
Q1051 2SC3311A SWITCH
Q1001 2SA1348 BACK.UP SWITCH
Q1002 2SC3402 BACK.UP SWITCH
Q1003 2SA1348 BACK.UP SWITCH
Q601 2SC3622A MIC SWITCH
Q602 2SC3311A MIC AMP
S1009 PRESET/TIMER +
S1010 PRESET/TIMER BAND
S1011 PRESET/TIMER -
S1012 FUNCTION
S1013 S-SUR
S1014 PRESET
S1015 EQ
S1016 CLOCK SET TIMER REC
S1017 MEMORY/NEXT
S1018 STEREO/MONO
S1019 TUNING +
S1020 TUNING -
S1021 DBFB
S1001 POWER
S1002 CLOCK SET TIMER
D1053 CLASSIC
D1054 POPS
D1055 DISCO
D1051 BGM
D1052 JAZZ
D1059 S-SUR
D1058 DBFB
J602 MIX-MIC
J601 HEADPHONES
CN602 TO VOL BOARD CN403
CN1006 CN601
ITALIAN MODEL
AEP, GERMAN MODEL
GERMAN ITALIAN MODEL
AEP MODEL
+30dB
+20dB
+6dB

7-9. SCHEMATIC DIAGRAMS—CD Section—

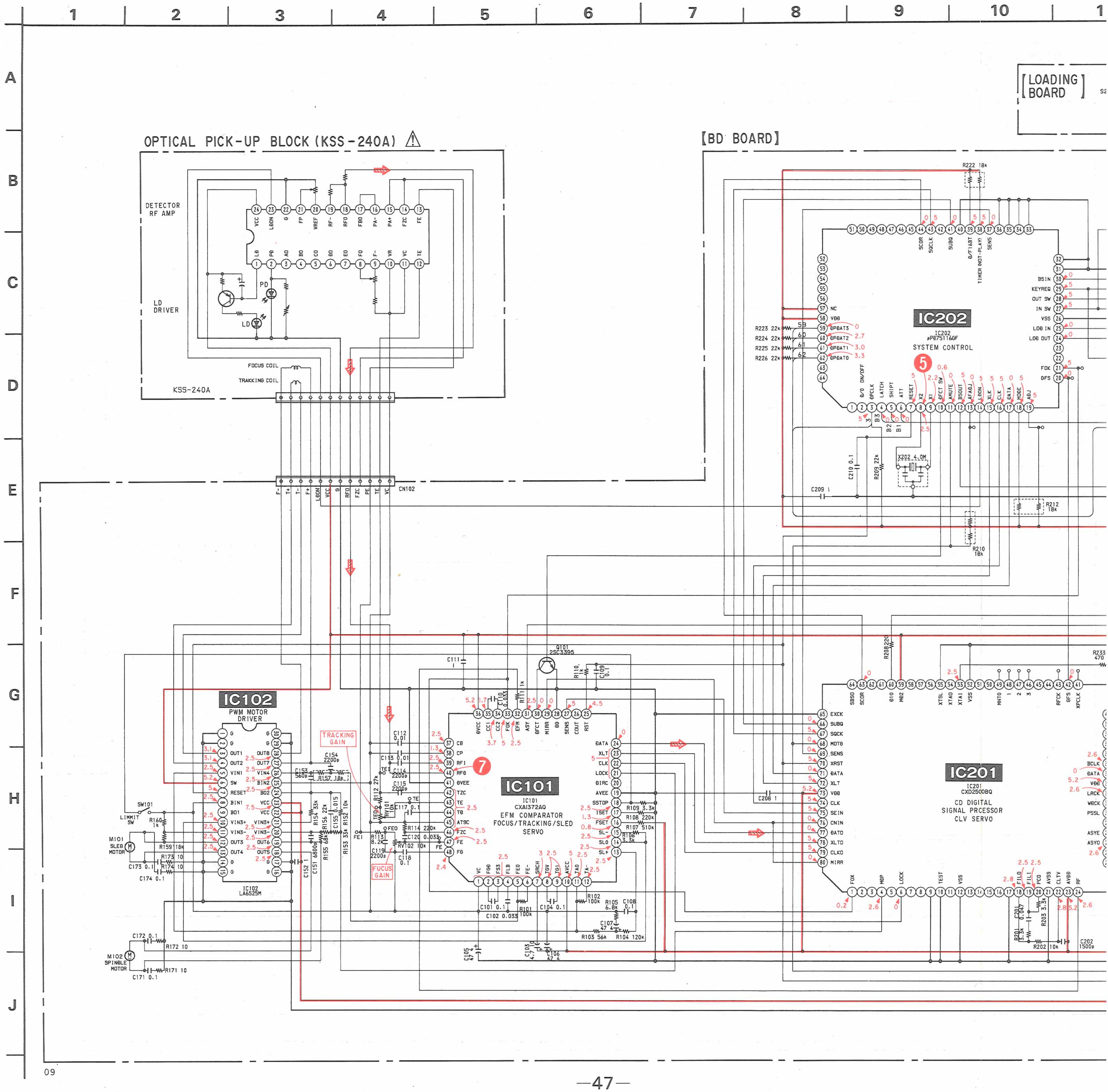
• Wave forms



Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:

- All capacitors are in μF unless otherwise noted.pF:μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- ▬ : B+Line
- ▬ ▬ ▬ : B-Line
- ☐ : adjustment for repair.
- Readings are taken with a non-signal.
- Voltages are taken with a VOM (Input Impedance 10MΩ)Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD


1
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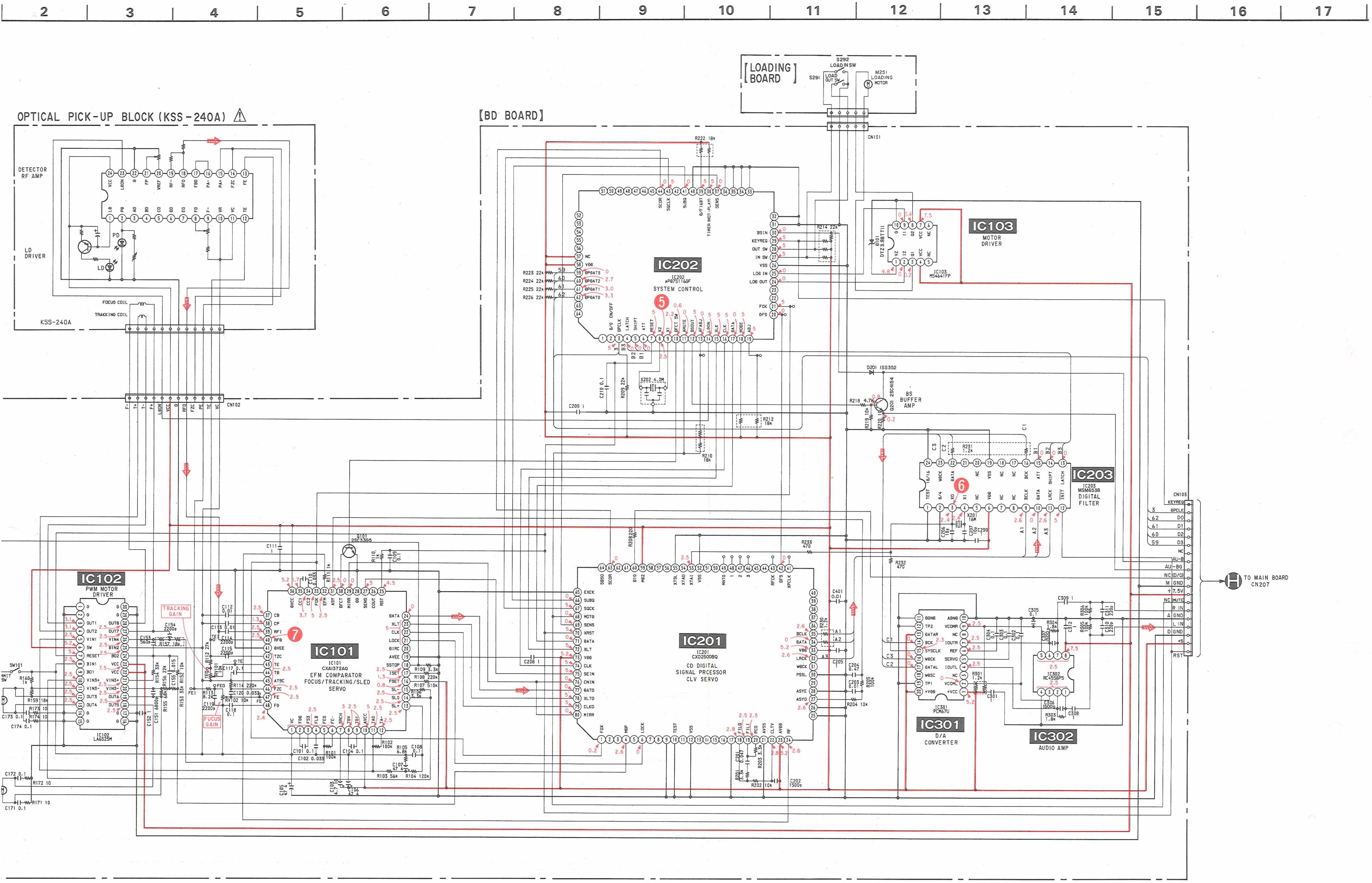
10
A
B
C
D
E
F
G
H
I
J
LOADING BOARD
OPTICAL PICK-UP BLOCK (KSS-240A) ⚠
DETECTOR RF AMP
LD DRIVER
PD
LD
FOCUS COIL
TRAKKING COIL
KSS-240A
CN102
F-
T+
T-
F+
LDON
VCC
G
RFO
FZC
PE
TE
VC
[BD BOARD]
R222 18k
IC202
μPD75116GF
SYSTEM CONTROL
R223 22k
R224 22k
R225 22k
R226 22k
X202 4.0M
C209
C210 0.1
R209 22k
R212 18k
R210 18k
IC102
PWM MOTOR DRIVER
IC102 LA6525M
TRACKING GAIN
FOCUS GAIN
SW101 LIMIT SW
M101 SLED MOTOR
M102 SPINDLE MOTOR
R160 1k
R159 18k
R173 10
R174 10
R172 10
R171 10
C172 0.1
C173 0.1
C174 0.1
C171 0.1
C151 6800p
C152 1
R153 33k
R154 22k
R155 68k
R156 22k
R152 10k
C153 5600p
C154 2200p
R157 18k
R112 27k
C112 0.01
C113 0.01
C114 2200p
C115 2200p
C117 0.1
C119 2200p
C118 0.1
R113 8.2k
R114 220k
C120 0.033
RV102 10k
IC101
CXA1372AQ
EFM COMPARATOR
FOCUS/TRACKING/SLED SERVO
Q101 2SC3395
C111
R110 1k
C109 0.1
C101 0.1
C102 0.033
R101 100k
C104 0.1
R102 100k
R105 6.8k
C108 0.1
C107 47
R103 56k
R104 120k
R109 3.3k
R108 220k
R107 510k
C105 47
C103 47
C106 47
C208 1
R208 22k
IC201
CXD2500BQ
CD DIGITAL SIGNAL PROCESSOR
CLV SERVO
R233 470
R203 3.3k
R201 33k
R202 10k
C201
C202 1500p
09



2
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4
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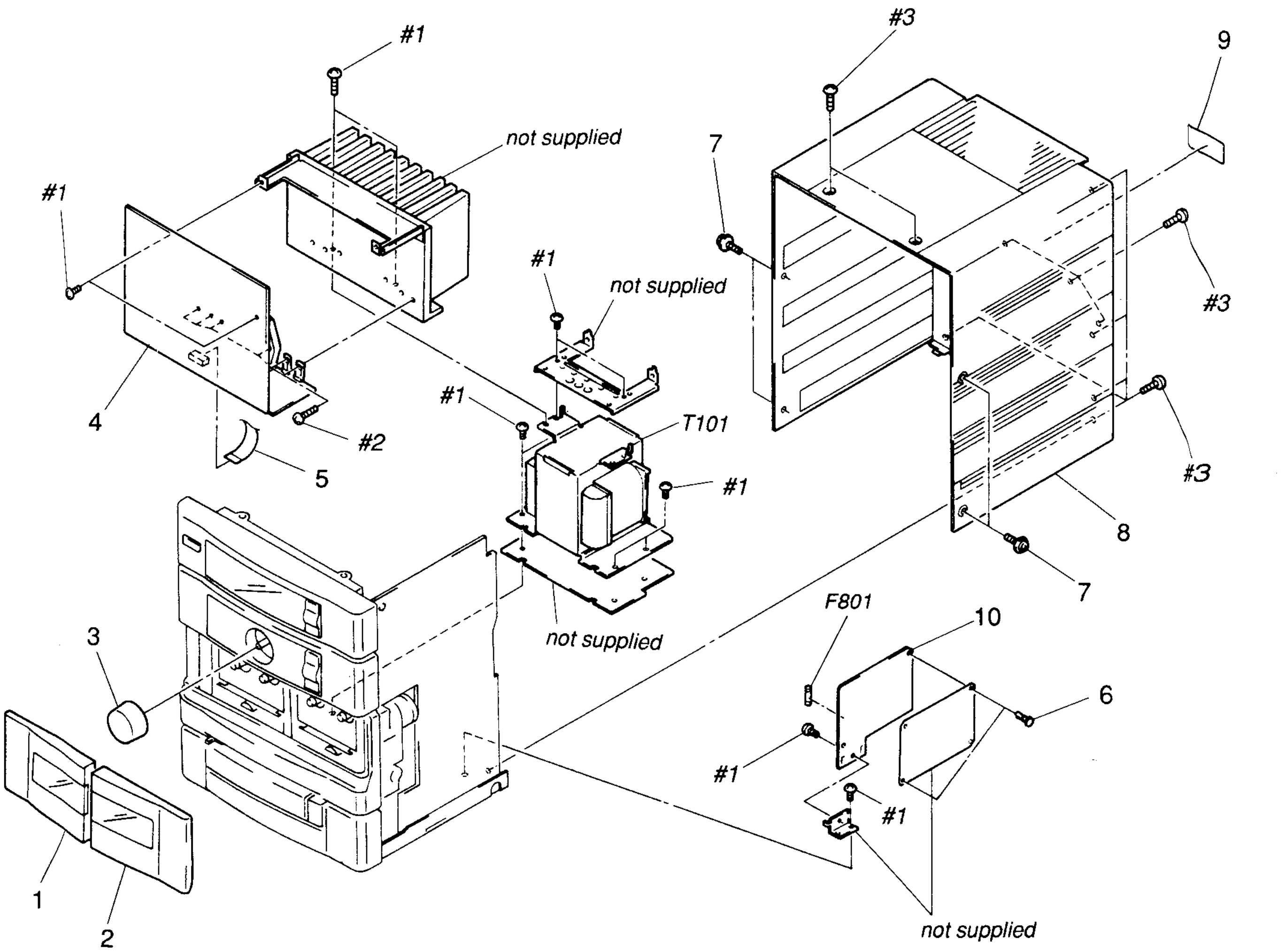
6
7
8
9
10
11
12
13
14
15
16
17
OPTICAL PICK-UP BLOCK (KSS-240A)
DETECTOR RF AMP
LD DRIVER
PD
LD
FOCUS COIL
TRAKKING COIL
KSS-240A
CN102
[BD BOARD]
[LOADING BOARD]
S292 LOADIN SW
S291 LOAD OUT SW
M251 LOADING MOTOR
CN101
R222 18k
IC202
IC202 μPD75116GF
SYSTEM CONTROL
R223 22k
R224 22k
R225 22k
R226 22k
X202 4.0M
C209 1
C210 0.1
R209 22k
R212 18k
R210 18k
R214 22k
IC103
MOTOR DRIVER
IC103 M54641FP
D101 DTZ5.6BTT11
D201 1SS352
Q201 2SC4154
BS BUFFER AMP
R218 4.7k
R219 10k
R220 10k
IC203
IC203 MSM6538
DIGITAL FILTER
X201 16M
R231 1.2k
CN103
TO MAIN BOARD CN207
KEYREQ
ØPCLK
DO
D1
D2
D3
NC
AU-B
AU-BG
NC D/O
M GND
+7.5V
NC MUTE
R IN
A GND
L IN
D GND
+5
RST
IC201
IC201 CXD2500BQ
CD DIGITAL SIGNAL PROCESSOR CLV SERVO
R233 470
R232 470
C401 0.01
C205
C204 0.47
C203 0.01
R205 100k
R204 10k
R202 10k
R203 3.3k
C202 1500p
C206 1
IC101
IC101 CXA1372AQ
EFM COMPARATOR FOCUS/TRACKING/SLED SERVO
Q101 2SC3395
C111 1
C112 0.01
C113 0.01
C114 2200p
C115 2200p
C117 0.1
C118 0.1
C119 2200p
C120 0.033
R114 220k
RV102 10k
R113 8.2k
RV101
R109 3.3k
R108 220k
R107 510k
R106 3.3k
R105 6.8k
R104 120k
R103 56k
R102 100k
R101 100k
C101 0.1
C102 0.033
C104 0.1
C105 47
C106 47
C107 47
C108 0.1
TRACKING GAIN
FOCUS GAIN
IC102
PWM MOTOR DRIVER
IC102 LA6525M
C154 2200p
C153 5600p
R157 18k
R154 33k
R155 68k
R156 22k
R152 10k
R153 33k
C152 6800p
C151 0.015
C155 0.015
SW101
R160 1k
R159 18k
R173 10
R174 10
R172 10
R171 10
C175 0.1
C174 0.1
C173 0.1
C172 0.1
C171 0.1
IC301
IC301 PCM67U
D/A CONVERTER
IC302
IC302 RC4558PS
AUDIO AMP
R301 1.2k
R303 1.8k
R304 1.8k
C306 1500p
C305 0.1
C309 1
C310 2200p
C311 2200p
R305 100k
R306 100k
5
6
7

SECTION 8
EXPLODED VIEWS

NOTE:
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.
- Germany model is abbreviated as G, and also Italian model is IT.

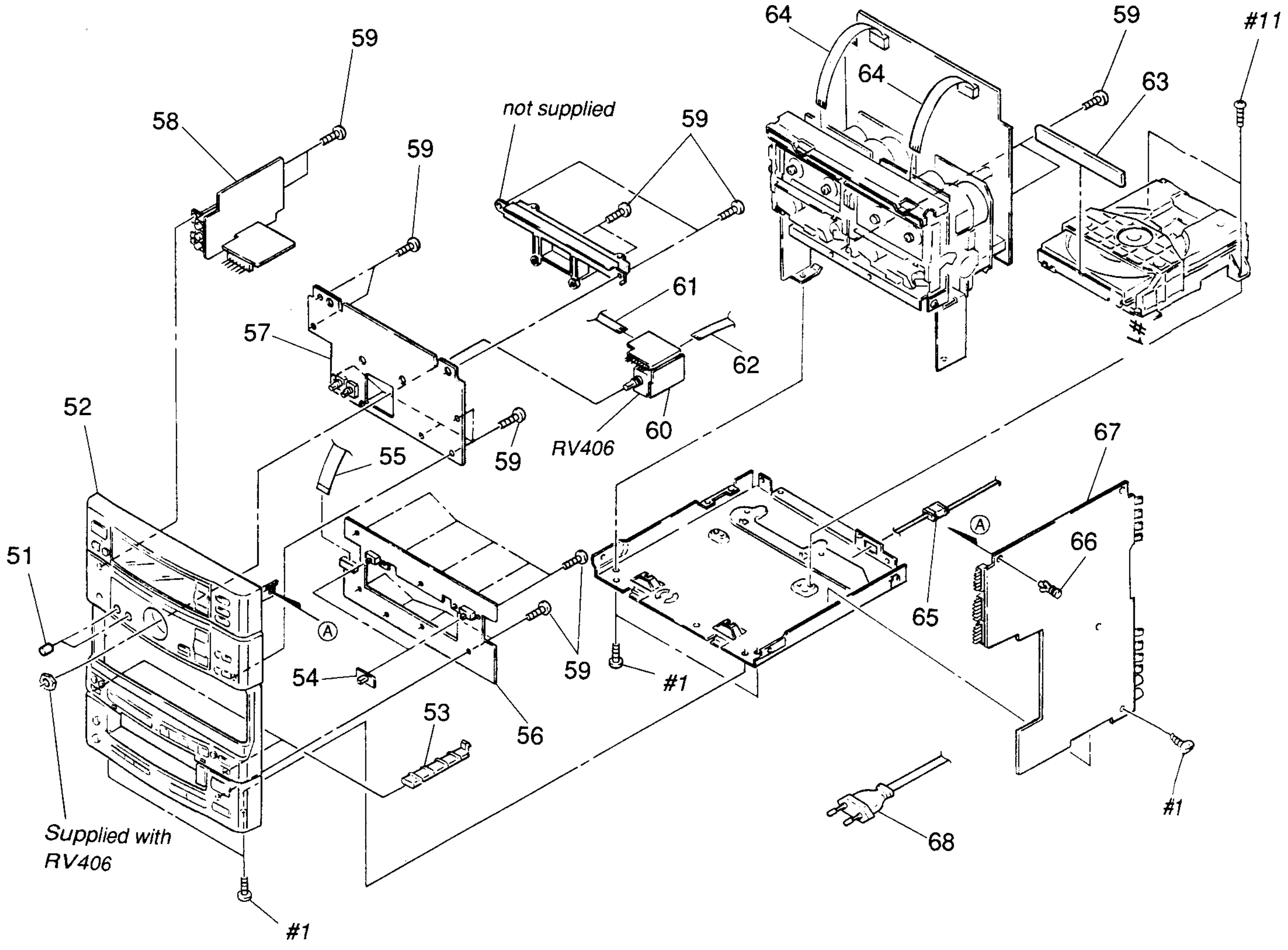
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

8-1. CASE, POWER SECTION



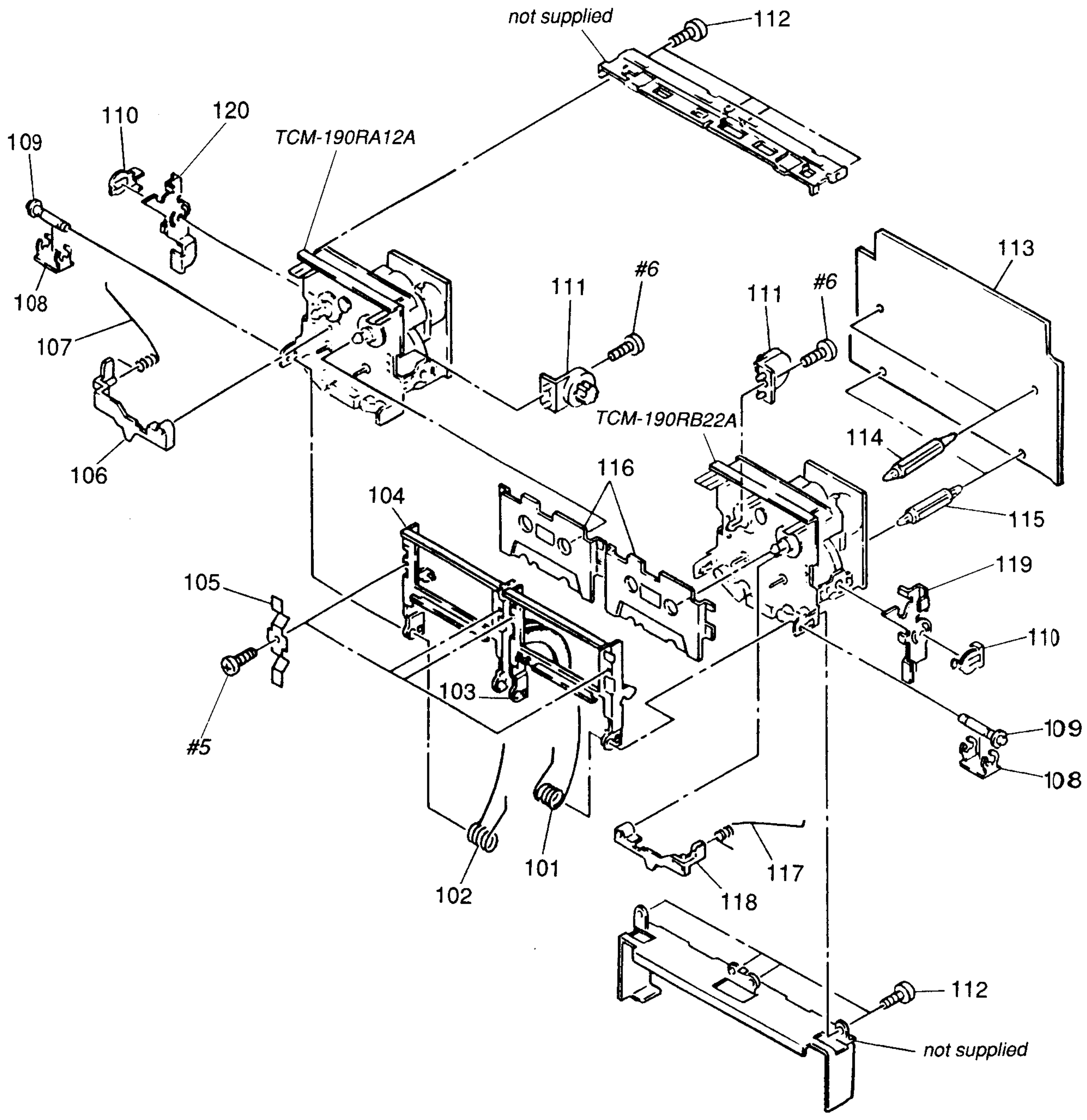
Ref. No.	Part No.	Description	Remark
1	X-4942-643-1	LID (A) ASSY, CASSETTE	
2	X-4942-644-1	LID (B) ASSY, CASSETTE	
3	X-4942-657-1	KNOB (VOLUME) ASSY	
* 4	A-4356-956-A	POWER BOARD, COMPLETE (AEP)	
* 4	A-4356-964-A	POWER BOARD, COMPLETE (G, IT)	
5	1-690-997-11	WIRE (FLAT TYPE) (11 CORE)	
6	3-531-576-11	RIVET	
7	3-704-366-01	SCREW (CASE) (M3X8)	
* 8	4-953-983-11	CASE	
* 9	4-941-548-01	LABEL, CLASS 1	
* 10	1-645-622-12	POWER BOARD	
⚠F801	1-532-203-00	FUSE (T2A, 250V)	
⚠T101	1-423-424-11	TRANSFORMER, POWER	

8-2. FRONT PANEL SECTION



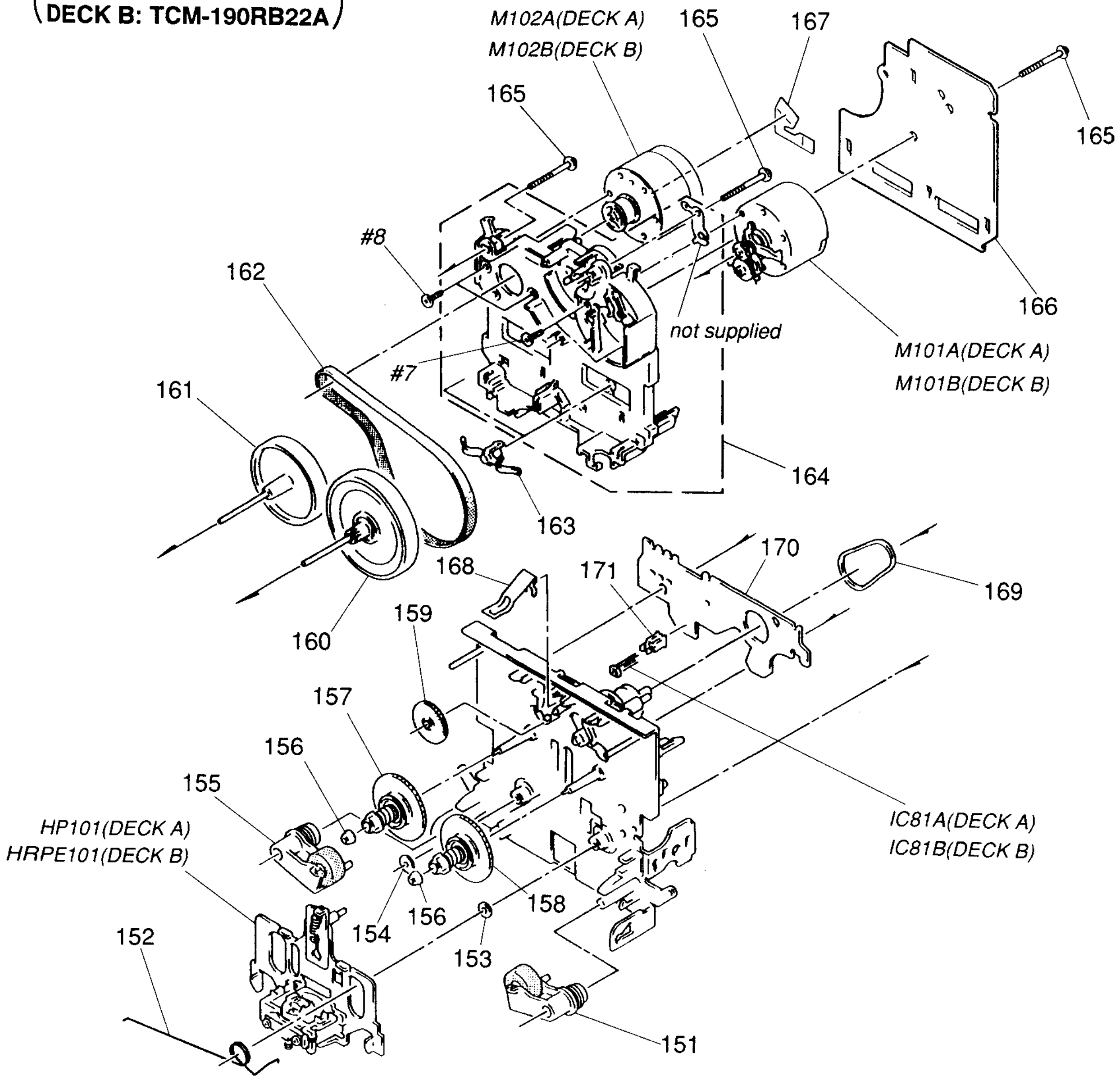
Ref. No.	Part No.	Description	Remark
51	4-952-011-11	KNOB (DBFB/BALANCE)	
52	X-4943-254-1	PANEL ASSY, FRONT	
53	4-951-982-01	BUTTON (TC-E)	
54	4-951-985-01	KNOB (SLIDE)	
55	1-690-854-21	WIRE (FLAT TYPE) (16 CORE)	
* 56	A-4356-381-A	SWITCH BOARD, COMPLETE (AEP)	
* 56	A-4356-961-A	SWITCH BOARD, COMPLETE (G, IT)	
* 57	A-4356-957-A	DISPLAY BOARD, COMPLETE (AEP)	
* 57	A-4356-965-A	DISPLAY BOARD, COMPLETE (G)	
* 57	A-4356-966-A	DISPLAY BOARD, COMPLETE (IT)	
* 58	A-4356-379-A	MIC HP BOARD, COMPLETE (AEP)	
* 58	A-4356-960-A	MIC HP BOARD, COMPLETE (G, IT)	
59	4-951-620-01	SCREW (2.6X8), +BVTP	
* 60	1-645-618-12	VOL BOARD	
61	1-690-996-11	WIRE (FLAT TYPE) (4 CORE)	
* 62	1-590-240-11	WIRE, FLAT TYPE (9 CORE)	
63	4-951-984-01	PANEL (LOADING)	
64	1-690-588-31	WIRE, FLAT TYPE (9 CORE)	
* 65	3-703-244-00	BUSHING (2104), CORD (AEP, G)	
* 65	3-703-571-11	BUSHING (S) (4516), CORD (IT)	
66	4-812-134-00	RIVET NYLON, 3.5	
* 67	A-4356-954-A	MAIN BOARD, COMPLETE (AEP)	
* 67	A-4356-959-A	MAIN BOARD, COMPLETE (G, IT)	
⚠68	1-590-042-11	CORD, POWER (WITH CORE) (G, IT)	
⚠68	1-696-169-11	CORD, POWER (AEP)	
RV406	1-241-998-11	RES, VAR, CARBON 100K/100K (VOLUME)	

8-3. MECHANISM DECK CHASSIS SECTION


not supplied
112
110
120
109
TCM-190RA12A
113
#6
111
111
#6
108
107
TCM-190RB22A
114
106
116
104
115
119
105
110
103
109
#5
108
101
117
102
118
112
not supplied

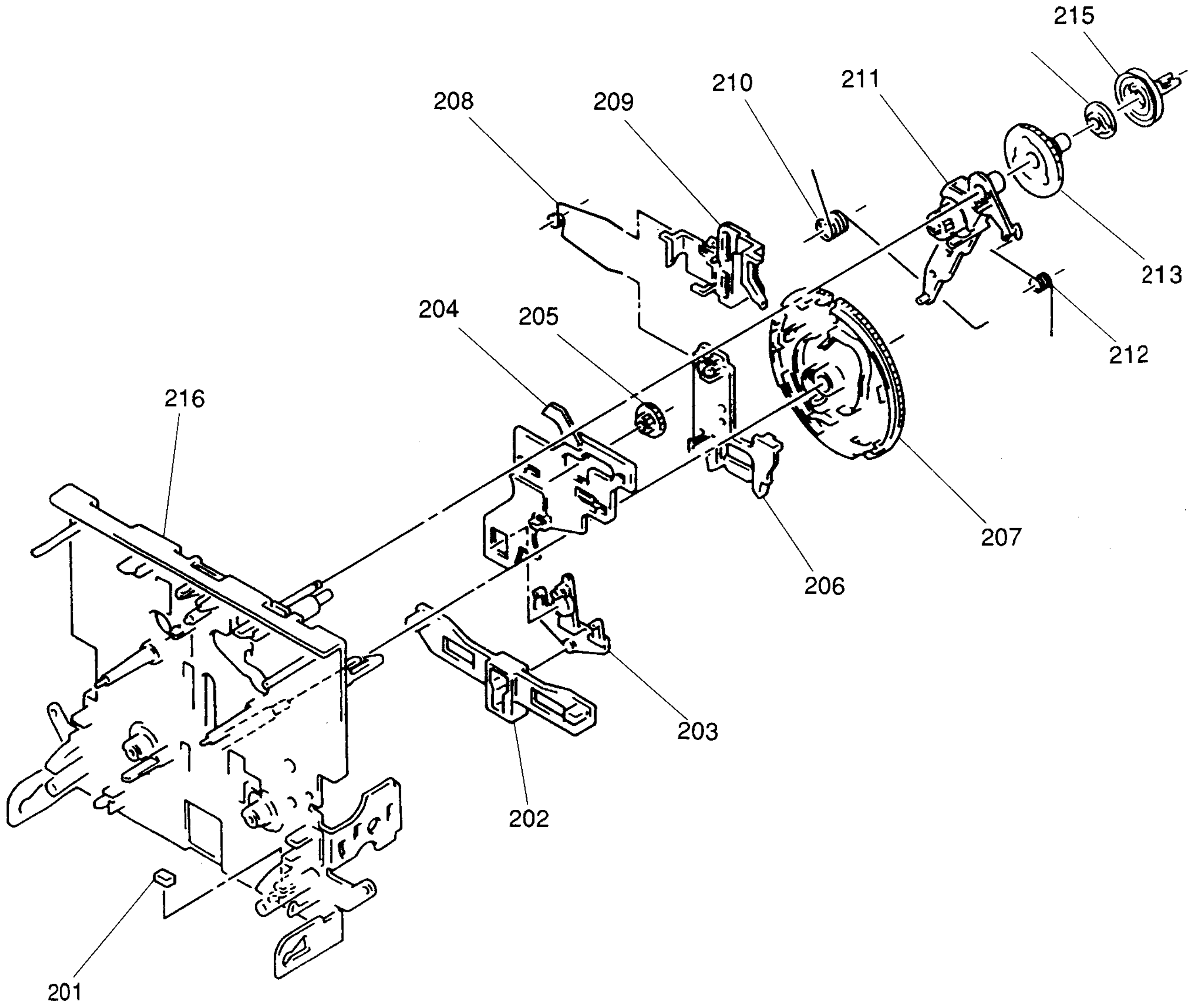
Ref.No.	Part No.	Description	Remark
101	3-354-960-01	SPRING (LOADING R), TORSION	
102	3-354-959-01	SPRING (LOADING L), TORSION	
103	X-3362-856-1	HOLDER (R) ASSY, CASSETTE	
104	X-3362-857-1	HOLDER (L) ASSY, CASSETTE	
105	3-340-137-01	SPRING, CASSETTE RETAINER	
106	3-354-955-01	LEVER (EJ SAFTY LEVER L)	
107	3-354-961-01	SPRING (EJ SAFTY SPRING L)	
108	3-367-720-01	RING (W), RETAINING	
109	3-367-721-01	SHAFT (FULCRUM SHAFT)	
110	3-354-957-01	JOINT (LOCK LEVER)	
111	3-354-963-01	DAMPER	
112	4-951-620-01	SCREW (2.6X8), +BVTP	
* 113	A-4356-963-A	TC BOARD, COMPLETE (G, IT)	
* 113	A-4356-383-A	TC BOARD, COMPLETE (AEP)	
* 114	3-682-419-31	HOLDER, P.C.B	
* 115	3-682-419-21	HOLDER, P.C.B	
116	3-367-711-01	RETAINER, CASSETTE	
117	3-354-962-01	SPRING (EJ SAFTY SPRING R)	
118	3-354-956-01	LEVER (EJ SAFTY LEVER R)	
* 119	3-367-710-01	LEVER (LOCK LEVER R)	
* 120	3-367-709-01	LEVER (LOCK LEVER L)	

8-4. MECHANISM DECK SECTION-1
(DECK A: TCM-190RA12A
DECK B: TCM-190RB22A)


M102A(DECK A)
M102B(DECK B)
165
167
165
165
#8
162
166
not supplied
M101A(DECK A)
M101B(DECK B)
#7
161
164
163
170
169
168
171
160
159
157
156
155
HP101(DECK A)
HRPE101(DECK B)
IC81A(DECK A)
IC81B(DECK B)
158
152
154
156
153
151

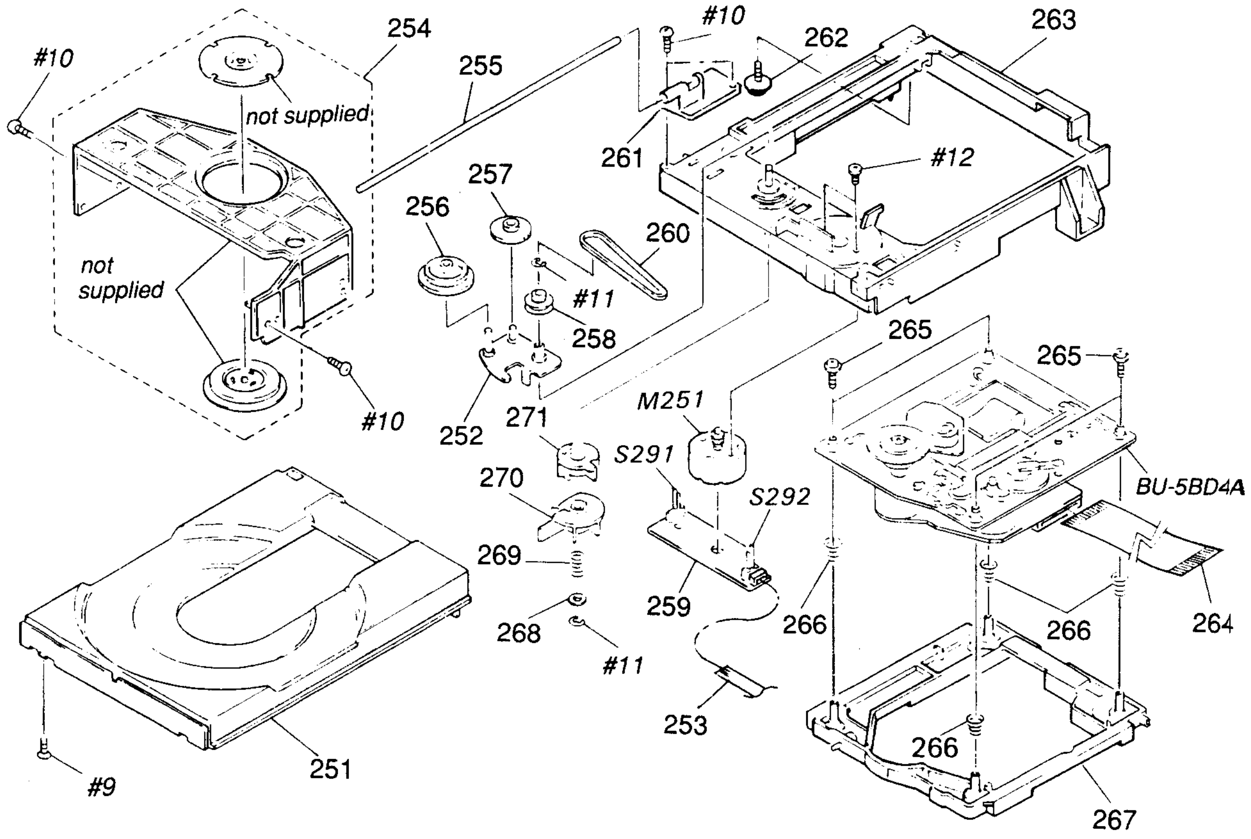
Ref. No.	Part No.	Description	Remark
151	X-3359-408-1	LEVER (PINCH LEVER FWD) ASSY	
152	3-359-455-01	SPRING, TORSION	
153	3-356-713-01	WASHER	
154	3-356-714-01	WASHER	
155	X-3359-409-1	LEVER (PINCH LEVER REV) ASSY	
156	3-362-308-01	CAP (REEL)	
157	X-3362-078-1	TABLE ASSY (B), REEL	
158	X-3359-404-1	TABLE ASSY, REEL	
159	3-359-424-01	GEAR (REV GEAR)	
160	X-3359-406-1	FLYWHEEL (FWD) ASSY	
161	X-3359-410-1	FLYWHEEL (REV) ASSY	
162	3-359-417-01	BELT (FLAT), CAPSTAN	
163	3-575-321-00	RETAINER, THRUST, CAPSTAN	
* 164	3-359-436-01	BASE (THRUST RETAINER), FITTING	
165	3-359-414-01	SCREW (+PTPWH 2X23)	
* 166	A-2006-399-A	AUDIO-A BOARD, COMPLETE (DECK A)	
* 166	A-2006-400-A	AUDIO-B BOARD, COMPLETE (DECK B)	
167	1-638-983-11	MOTOR FLEXIBLE BOARD	
168	3-359-430-01	SPRING(CASSETTE RETAINER), LEAF	
169	3-359-466-01	BELT (FR), SQUARE	
* 170	1-634-841-14	LEAF SW-A BOARD (DECK A)	
* 170	1-634-841-14	LEAF SW-B BOARD (DECK B)	
171	3-343-419-01	HOLDER (S SENSOR A)	
HP101	A-2003-837-F	BASE ASSY, HEAD (DECK A)	
HRPE101	A-2003-838-A	BASE ASSY, HEAD (DECK B)	
IC81A	8-719-710-03	PHOTO REFLECTOR NJL5165K-B (DECK)	
IC81B	8-719-710-03	PHOTO REFLECTOR NJL5165K-B (DECK)	
M101A	X-3363-501-1	MOTOR ASSY (REEL) (DECK A)	
M101B	X-3363-501-1	MOTOR ASSY (REEL) (DECK B)	
M102A	X-3359-417-1	MOTOR ASSY (CAPSTAN) (DECK A)	
M102B	X-3359-417-1	MOTOR ASSY (CAPSTAN) (DECK B)	

8-5. MECHANISM DECK SECTION-2
(DECK A: TCM-190RA12A
DECK B: TCM-190RB22A)



Ref. No.	Part No.	Description	Remark
201	3-359-469-01	SPACER	
* 202	3-359-425-01	SLIDER (REVERSE SLIDER)	
203	3-359-426-01	LEVER (REVERSE LEVER)	
* 204	3-359-415-01	SLIDER (TRIGGER SLIDER)	
205	3-359-448-01	GEAR (TRIGGER)	
* 206	3-359-427-01	SLIDER (LEVERSE SLIDER)	
207	3-359-420-01	GEAR (CAM GEAR)	
208	3-359-454-01	SPRING, TORSION	
209	3-359-429-01	SLIDER (BRAKE PLATE)	
210	3-359-456-01	SPRING(TRIGGER SPRING), TORSION	
211	X-3359-405-1	LEVER (FR ARM) ASSY	
212	3-359-453-01	SPRING (FR ARM), TORSION	
213	3-359-419-01	GEAR (FR GEAR)	
214	3-359-421-01	CLUTCH (REEL DISK)	
215	3-359-418-01	PULLEY (FR PULLEY)	
216	X-3363-790-1	CHASSIS ASSY, MECHANICAL	

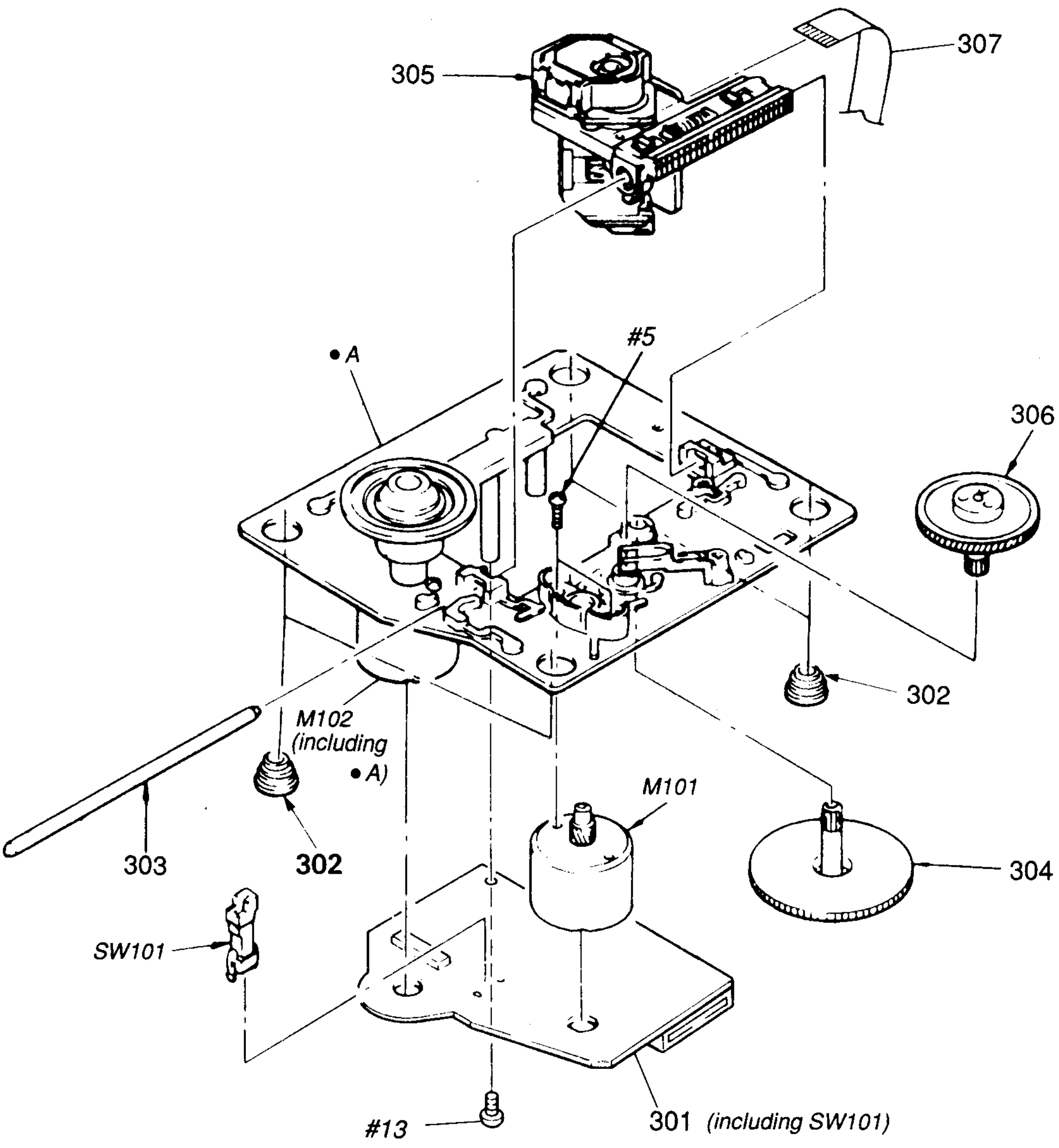
8-6. CD MECHANISM SECTION-1 (CDM13B-5BD4A)



#10
254
255
not supplied
not supplied
#10
257
256
260
#11
258
252
271
270
269
268
#11
#10
262
263
261
#12
265
265
M251
S291
S292
BU-5BD4A
259
266
266
264
253
266
267
251
#9

Ref. No.	Part No.	Description	Remark
251	4-944-012-01	TABLE, DISC	
252	X-4929-703-1	ARM ASSY, SWING	
253	1-590-530-11	WIRE, FLAT TYPE	
254	A-4604-752-A	HOLDER (MG) ASSY	
255	4-929-764-01	SHAFT (TABLE GUIDE)	
256	4-927-620-01	GEAR (P)	
257	4-927-628-01	GEAR (C)	
258	4-929-724-01	PULLEY (B)	
* 259	1-638-308-11	LOADING BOARD	
260	4-927-649-01	BELT	
261	4-944-006-01	BEARING	
* 262	4-917-583-21	BRACKET, YOKE	
263	X-4941-462-1	CHASSIS (MD) ASSY	
264	1-690-853-11	WIRE (FLAT TYPE) (19 CORE)	
265	4-933-134-01	SCREW (+PTPWH M2.6X6)	
266	4-917-541-01	SPRING (B)	
267	4-929-747-01	HOLDER (BU)	
268	4-927-654-01	WASHER (LIMITER)	
269	3-659-338-00	SPRING, COMPRESSION	
270	4-929-729-01	CAM (B)	
271	4-929-727-01	CAM (A)	
M251	A-4608-362-A	MOTOR (L) ASSY (LOADING)	
S291	1-571-924-12	SWITCH, LEAF (LOAD OUT)	
S292	1-571-924-12	SWITCH, LEAF (LOAD IN)	

8-7. CD MECHANISM SECTION-2 (BU-5BD4A)


305
307
• A
#5
306
302
M102 (including • A)
303
302
M101
304
SW101
#13
301 (including SW101)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
* 301	A-4617-936-A	BD BOARD, COMPLETE	
302	4-933-126-01	INSULATOR (A)	
303	4-917-565-01	SHAFT, SLED	
304	4-917-564-01	GEAR (P), FLATNESS	
⚠305	8-848-144-11	DEVICE, OPTICAL KSS-240A	
306	4-917-567-01	GEAR (M)	
307	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
M101	X-4917-504-1	MOTOR ASSY (SLED)	
M102	X-4917-523-3	MOTOR ASSY (SPINDLE)	
SW101	1-572-085-11	SWITCH, LEAF (LIMIT IN)	

AUDIO-A **AUDIO-B**

SECTION 9
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- Germany model is abbreviated as G, and also Italian model is IT.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

Ref.No.	Part No.	Description			Remark
*	A-2006-399-A	AUDIO-A BOARD, COMPLETE **********************			
		< CAPACITOR >			
C11	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C12	1-136-157-00	FILM	0.022uF	5%	50V
C13	1-124-234-00	ELECT	22uF	20%	16V
C18	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C21	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C22	1-136-157-00	FILM	0.022uF	5%	50V
C23	1-124-234-00	ELECT	22uF	20%	16V
C28	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C31	1-124-234-00	ELECT	22uF	20%	16V
C32	1-124-234-00	ELECT	22uF	20%	16V
C72	1-124-499-11	ELECT, NONPOLAR	1uF	20%	50V
		< JACK >			
* CNJ31	1-580-782-11	CONNECTOR, BOARD TO BOARD			
* CNJ72	1-580-411-11	SOCKET, CONNECTOR 4P			
		< CONNECTOR >			
* CNP32	1-580-772-11	PIN, CONNECTOR (PC BOARD) 4P			
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P			
		< IC >			
IC31 A	8-759-106-02	IC uPC4570G2			
		< JUMPER RESISTOR >			
JW1	1-216-295-00	METAL CHIP	0	5%	1/10W
JW51	1-216-296-00	METAL CHIP	0	5%	1/8W
JW52	1-216-296-00	METAL CHIP	0	5%	1/8W
JW53	1-216-296-00	METAL CHIP	0	5%	1/8W
JW54	1-216-296-00	METAL CHIP	0	5%	1/8W
		< TRANSISTOR >			
Q71 A	8-729-602-36	TRANSISTOR 2SA1602			
		< RESISTOR >			
R11	1-216-099-00	METAL CHIP	120K	5%	1/10W
R12	1-216-025-00	METAL CHIP	100	5%	1/10W
R13	1-216-100-00	METAL CHIP	130K	5%	1/10W
R14	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R21	1-216-099-00	METAL CHIP	120K	5%	1/10W
R22	1-216-025-00	METAL CHIP	100	5%	1/10W
R23	1-216-100-00	METAL CHIP	130K	5%	1/10W
R24	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R31	1-216-033-00	METAL CHIP	220	5%	1/10W
R32	1-216-033-00	METAL CHIP	220	5%	1/10W
R71	1-216-082-00	METAL CHIP	24K	5%	1/10W
R72	1-216-081-00	METAL CHIP	22K	5%	1/10W
R73	1-216-089-00	METAL CHIP	47K	5%	1/10W
R74	1-216-089-00	METAL CHIP	47K	5%	1/10W
		< VARIABLE RESISTOR >			
RV11	1-241-627-11	RES, ADJ, CARBON 1K (PB (L) LEVEL)			
RV21	1-241-627-11	RES, ADJ, CARBON 1K (PB (R) LEVEL)			
RV71	1-241-630-11	RES, ADJ, CARBON 10K (NORMAL SPEED)			
RV72	1-241-630-11	RES, ADJ, CARBON 10K (HIGH SPEED)			
**					
*	A-2006-400-A	AUDIO-B BOARD, COMPLETE **********************			
		< CAPACITOR >			
C11	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C12	1-136-157-00	FILM	0.022uF	5%	50V
C13	1-124-234-00	ELECT	22uF	20%	16V
C14	1-136-273-91	FILM	75PF	5%	630V
C15	1-164-080-11	CERAMIC	390PF	10%	50V
C17	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C18	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C21	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C22	1-136-157-00	FILM	0.022uF	5%	50V
C23	1-124-234-00	ELECT	22uF	20%	16V
C24	1-136-273-91	FILM	75PF	5%	630V
C25	1-164-080-11	CERAMIC	390PF	10%	50V
C27	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C28	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C31	1-124-234-00	ELECT	22uF	20%	16V
C32	1-124-234-00	ELECT	22uF	20%	16V
C33	1-124-234-00	ELECT	22uF	20%	16V
C51	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C52	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C53	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V
C54	1-136-559-11	FILM	0.0047uF	5%	630V

Ref. No.	Part No.	Description			Remark
C56	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C57	1-164-346-11	CERAMIC CHIP	1uF		16V
C58	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C72	1-124-499-11	ELECT, NONPOLAR	1uF	20%	50V

< JACK >

Ref. No.	Part No.	Description
* CNJ31	1-580-782-11	CONNECTOR, BOARD TO BOARD
* CNJ33	1-580-782-11	CONNECTOR, BOARD TO BOARD
* CNJ72	1-580-411-11	SOCKET, CONNECTOR 4P

< CONNECTOR >

Ref. No.	Part No.	Description
* CNP32	1-580-781-11	PIN, CONNECTOR (PC BOARD) 7P
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P

< DIODE >

Ref. No.	Part No.	Description	
D31A	8-719-016-74	DIODE	1SS352

< IC >

Ref. No.	Part No.	Description	
IC31	8-759-106-02	IC	uPC4570G2

< JUMPER RESISTOR >

Ref. No.	Part No.	Description			
JW1	1-216-296-00	METAL CHIP	0	5%	1/8W
JW2	1-216-295-00	METAL CHIP	0	5%	1/10W
JW3	1-216-295-00	METAL CHIP	0	5%	1/10W
JW4	1-216-295-00	METAL CHIP	0	5%	1/10W
JW6	1-216-295-00	METAL CHIP	0	5%	1/10W
JW7	1-216-295-00	METAL CHIP	0	5%	1/10W
JW52	1-216-296-00	METAL CHIP	0	5%	1/8W
JW53	1-216-296-00	METAL CHIP	0	5%	1/8W
JW54	1-216-296-00	METAL CHIP	0	5%	1/8W
JW55	1-216-296-00	METAL CHIP	0	5%	1/8W
JW56	1-216-296-00	METAL CHIP	0	5%	1/8W
JW57	1-216-296-00	METAL CHIP	0	5%	1/8W
JW58	1-216-296-00	METAL CHIP	0	5%	1/8W
JW59	1-216-296-00	METAL CHIP	0	5%	1/8W
JW60	1-216-296-00	METAL CHIP	0	5%	1/8W
JW61	1-216-296-00	METAL CHIP	0	5%	1/8W

< COIL >

Ref. No.	Part No.	Description	
L11	1-410-780-11	INDUCTOR	27mH
L21	1-410-780-11	INDUCTOR	27mH

< TRANSISTOR >

Ref. No.	Part No.	Description	
Q51	8-729-808-01	TRANSISTOR	2SD1622-S
Q52	8-729-808-01	TRANSISTOR	2SD1622-S
Q53	8-729-808-01	TRANSISTOR	2SD1622-S
Q71B	8-729-602-36	TRANSISTOR	2SA1602

< RESISTOR >

Ref. No.	Part No.	Description				Remark
R11	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R12	1-216-025-00	METAL CHIP	100	5%	1/10W	
R13	1-216-100-00	METAL CHIP	130K	5%	1/10W	
R14	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R15	1-249-430-11	CARBON	12K	5%	1/4W	
R21	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R22	1-216-025-00	METAL CHIP	100	5%	1/10W	
R23	1-216-100-00	METAL CHIP	130K	5%	1/10W	
R24	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R25	1-249-430-11	CARBON	12K	5%	1/4W	
R31	1-216-033-00	METAL CHIP	220	5%	1/10W	
R32	1-216-033-00	METAL CHIP	220	5%	1/10W	
⚠R41	1-249-393-11	CARBON	10	5%	1/4W	F
⚠R42	1-249-393-11	CARBON	10	5%	1/4W	F
R51	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R52	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R53	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R54	1-216-309-00	METAL CHIP	5.6	5%	1/10W	
R55	1-216-309-00	METAL CHIP	5.6	5%	1/10W	
R56	1-216-298-00	METAL CHIP	2.2	5%	1/10W	
R71	1-216-082-00	METAL CHIP	24K	5%	1/10W	
R72	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R73	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R74	1-216-089-00	METAL CHIP	47K	5%	1/10W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description
RV11	1-241-627-11	RES, ADJ, CARBON 1K (PB (L) LEVEL)
RV12	1-238-551-11	RES, ADJ, CARBON 220K (REC BIAS (L))
RV21	1-241-627-11	RES, ADJ, CARBON 1K (PB (R) LEVEL)
RV22	1-238-551-11	RES, ADJ, CARBON 220K (REC BIAS (R))
RV71	1-241-630-11	RES, ADJ, CARBON 10K (NORMAL SPEED)
RV72	1-241-630-11	RES, ADJ, CARBON 10K (HIGH SPEED)

< RELAY >

Ref. No.	Part No.	Description
RY31	1-515-913-11	RELAY

< TRANSFORMER >

Ref. No.	Part No.	Description
T51	1-406-419-11	COIL, BIAS OSCILLATION

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* A-4617-936-A BD BOARD, COMPLETE

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< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C101	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C102	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C103	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V
C104	1-163-038-00	CERAMIC CHIP	0.1uF		25V

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

BD

Ref. No.	Part No.	Description			Remark
C105	1-126-607-11	ELECT CHIP	47uF	20%	4V
C106	1-126-607-11	ELECT CHIP	47uF	20%	4V
C107	1-126-607-11	ELECT CHIP	47uF	20%	4V
C108	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C109	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C110	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C111	1-164-346-11	CERAMIC CHIP	1uF		16V
C112	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C113	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C114	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C115	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C117	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C118	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C119	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C120	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C151	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C152	1-164-346-11	CERAMIC CHIP	1uF		16V
C153	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C154	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C155	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C171	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C172	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C173	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C174	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C201	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C202	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C203	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C204	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C205	1-164-346-11	CERAMIC CHIP	1uF		16V
C206	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C207	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C208	1-164-346-11	CERAMIC CHIP	1uF		16V
C209	1-164-346-11	CERAMIC CHIP	1uF		16V
C210	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C299	1-164-346-11	CERAMIC CHIP	1uF		16V
C301	1-164-346-11	CERAMIC CHIP	1uF		16V
C302	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C303	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C304	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C305	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C306	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C307	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C308	1-164-346-11	CERAMIC CHIP	1uF		16V
C309	1-164-346-11	CERAMIC CHIP	1uF		16V
C310	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C311	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C312	1-164-346-11	CERAMIC CHIP	1uF		16V
C401	1-164-232-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
CN101	1-580-858-11	SOCKET, CONNECTOR (SMT) 5P			
CN102	1-580-866-11	SOCKET, CONNECTOR (SMT) 12P			
CN103	1-580-872-41	SOCKET, CONNECTOR (SMT) 19P			
		< DIODE >			
D101	8-719-422-12	DIODE MA8039			
D201	8-719-016-74	DIODE 1SS352			
		< IC >			
IC101	8-752-053-73	IC CXA1372AQ			
IC102	8-759-823-48	IC LA6525M			
IC103	8-759-636-20	IC M54641FP			
IC201	8-752-352-93	IC CXD2500BQ			
IC202	8-759-059-86	IC uPD75116GF-F21-3BE			
IC203	8-759-098-27	IC MSM6538-01GS-VKR1			
IC301	8-759-155-52	IC PCM-67U-T1B			
IC302	8-759-996-43	IC RC4558PS			
		< MOTOR >			
M102	X-4917-523-3	MOTOR ASSY (SPINDLE)			
		< TRANSISTOR >			
Q101	8-729-805-45	TRANSISTOR 2SC3395			
Q201	8-729-602-21	TRANSISTOR 2SC4154			
		< RESISTOR >			
R101	1-216-097-00	METAL CHIP	100K	5%	1/10W
R102	1-216-097-00	METAL CHIP	100K	5%	1/10W
R103	1-216-091-00	METAL CHIP	56K	5%	1/10W
R104	1-216-099-00	METAL CHIP	120K	5%	1/10W
R105	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R106	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R107	1-216-114-00	METAL CHIP	510K	5%	1/10W
R108	1-216-105-00	METAL CHIP	220K	5%	1/10W
R109	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R110	1-216-049-00	METAL CHIP	1K	5%	1/10W
R111	1-216-049-00	METAL CHIP	1K	5%	1/10W
R112	1-216-083-00	METAL CHIP	27K	5%	1/10W
R113	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R114	1-216-105-00	METAL CHIP	220K	5%	1/10W
R152	1-216-073-00	METAL CHIP	10K	5%	1/10W
R153	1-216-085-00	METAL CHIP	33K	5%	1/10W
R154	1-216-085-00	METAL CHIP	33K	5%	1/10W
R155	1-216-093-00	METAL CHIP	68K	5%	1/10W
R156	1-216-081-00	METAL CHIP	22K	5%	1/10W
R157	1-236-427-11	NETWORK, RES	18K		
R159	1-216-079-00	METAL CHIP	18K	5%	1/10W
R160	1-216-049-00	METAL CHIP	1K	5%	1/10W
R171	1-216-001-00	METAL CHIP	10	5%	1/10W
R172	1-216-001-00	METAL CHIP	10	5%	1/10W
R173	1-216-001-00	METAL CHIP	10	5%	1/10W

Ref. No.	Part No.	Description				Remark
R174	1-216-001-00	METAL CHIP	10	5%	1/10W	
R201	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R202	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R203	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R204	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R205	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R208	1-216-033-00	METAL CHIP	220	5%	1/10W	
R209	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R210	1-236-427-11	NETWORK, RES	18K			
R212	1-236-427-11	NETWORK, RES	18K			
R214	1-239-039-11	NETWORK, RES	22K			
R218	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R219	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R220	1-216-001-00	METAL CHIP	10	5%	1/10W	
R222	1-236-427-11	NETWORK, RES	18K			
R223	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R224	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R225	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R226	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R230	1-236-413-11	NETWORK, RES	1.2K			
R231	1-236-413-11	NETWORK, RES	1.2K			
R232	1-216-041-00	METAL CHIP	470	5%	1/10W	
R233	1-216-041-00	METAL CHIP	470	5%	1/10W	
R301	1-236-413-11	NETWORK, RES	1.2K			
R303	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R304	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R305	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R306	1-216-097-00	METAL CHIP	100K	5%	1/10W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description
RV101	1-241-395-11	RES, ADJ, METAL GLAZE 10K(TRACKING GAIN)
RV102	1-241-395-11	RES, ADJ, METAL GLAZE 10K(FOCUS GAIN)

< SWITCH >

Ref. No.	Part No.	Description
SW101	1-572-085-11	SWITCH, LEAF (LIMIT IN)

< VIBRATOR >

Ref. No.	Part No.	Description
X201	1-579-280-11	VIBRATOR, CRYSTAL (16MHz)
X202	1-579-216-11	VIBRATOR, CERAMIC (4MHz)

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* A-4356-957-A DISPLAY BOARD, COMPLETE (AEP)

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* A-4356-965-A DISPLAY BOARD, COMPLETE (G)

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* A-4356-966-A DISPLAY BOARD, COMPLETE (IT)

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< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C501	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C502	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C503	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C504	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C505	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C506	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C511	1-126-157-11	ELECT	10uF	20%	16V
C512	1-126-157-11	ELECT	10uF	20%	16V
C1001	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1002	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C1003	1-124-442-00	ELECT	330uF	20%	6.3V
C1004	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1011	1-124-584-00	ELECT	100uF	20%	10V
C1012	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1013	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C1015	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1016	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C1020	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C1023	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C1024	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C1025	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1026	1-126-177-11	ELECT	100uF	20%	10V
C1030	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1031	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1032	1-126-154-11	ELECT	47uF	20%	6.3V
C1033	1-126-154-11	ELECT	47uF	20%	6.3V
C1034	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C1035	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1036	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1041	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1050	1-124-910-11	ELECT	47uF	20%	50V
C1051	1-124-443-00	ELECT	100uF	20%	10V
C1098	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C1099	1-163-038-00	CERAMIC CHIP	0.1uF		25V

< VIBRATOR >

Ref. No.	Part No.	Description
CF1001	1-579-599-21	VIBRATOR, CERAMIC (8.38MHz)

< CONNECTOR >

Ref. No.	Part No.	Description
* CN1001	1-569-156-11	SOCKET, CONNECTOR 10P
* CN1002	1-569-156-11	SOCKET, CONNECTOR 10P

DISPLAY

Ref. No.	Part No.	Description	Remark
CN1003	1-695-027-11	PLUG, CONNECTOR 10P	
* CN1004	1-566-970-11	HOUSING, CONNECTOR(PC BOARD)8P	
* CN1005	1-566-970-11	HOUSING, CONNECTOR(PC BOARD)8P	
* CN1006	1-565-980-21	HOUSING, CONNECTOR(PC BOARD) 9P	

< DIODE >

Ref. No.	Part No.	Description	Remark
D1001	8-719-400-20	DIODE MA152WA	
D1002	8-719-400-18	DIODE MA152WK	
D1004	8-719-400-20	DIODE MA152WA	
D1005	8-719-400-20	DIODE MA152WA	
D1007	8-719-400-20	DIODE MA152WA	
D1030	8-719-400-46	DIODE MA3056-L	
D1031	8-719-400-46	DIODE MA3056-L	
D1051	8-719-026-64	DIODE SML1260S (BGM)	
D1052	8-719-026-64	DIODE SML1260S (JAZZ)	
D1053	8-719-026-64	DIODE SML1260S (CLASSIC)	
D1054	8-719-026-64	DIODE SML1260S (POPS)	
D1055	8-719-026-64	DIODE SML1260S (DISCO)	
D1058	8-719-026-68	DIODE SML1960A (DBFB)	
D1059	8-719-026-68	DIODE SML1960A (S-SUR)	

< FLUORESCENT INDICATOR TUBE >

Ref. No.	Part No.	Description	Remark
FL1001	1-519-718-11	INDICATOR TUBE, FLUORESCENT	

< IC >

Ref. No.	Part No.	Description	Remark
IC106	8-759-927-29	IC SN74HCU04ANS	
IC501	8-759-996-43	IC RC4558PS	
IC1001	8-759-163-51	IC uPD78012GC-514-AB8	
IC1002	8-759-500-31	IC X24C01P	
IC1003	8-759-991-11	IC XR1091DCP	
IC1004	8-759-516-41	IC CD4052BCM	
IC1005	8-749-923-34	PHOTO DIODE GP1U59XB	
IC1006	8-759-512-44	IC SN755703	
IC1007	8-759-512-44	IC SN755703	

< JUMPER RESISTOR >

Ref. No.	Part No.	Description	Remark
JW1002	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW1004	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW1005	1-216-295-00	METAL CHIP 0 5% 1/10W	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q601	8-729-141-26	TRANSISTOR 2SC3622A-LK	
Q1001	8-729-900-61	TRANSISTOR DTA114ES	
Q1002	8-729-900-80	TRANSISTOR DTC114ES	
Q1003	8-729-900-61	TRANSISTOR DTA114ES	
Q1051	8-729-119-78	TRANSISTOR 2SC2785-HFE	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R501	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R503	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R504	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R505	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R507	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R508	1-216-080-00	METAL CHIP 20K 5% 1/10W	
R509	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R510	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R511	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R512	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R513	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R514	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R515	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R1001	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R1002	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R1003	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1004	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R1006	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R1007	1-216-025-00	METAL CHIP 100 5% 1/10W	
R1008	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R1010	1-216-041-00	METAL CHIP 470 5% 1/10W	
R1012	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1013	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R1014	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R1015	1-216-025-00	METAL CHIP 100 5% 1/10W	
R1017	1-216-041-00	METAL CHIP 470 5% 1/10W	
R1018	1-216-045-00	METAL CHIP 680 5% 1/10W	
R1019	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1020	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R1021	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R1022	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R1023	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R1024	1-216-041-00	METAL CHIP 470 5% 1/10W	
R1025	1-216-045-00	METAL CHIP 680 5% 1/10W	
R1026	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1027	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R1029	1-216-295-00	METAL CHIP 0 5% 1/10W	
R1030	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R1050	1-216-041-00	METAL CHIP 470 5% 1/10W	(AEP, G)
R1050	1-216-050-00	METAL CHIP 1.1K 5% 1/10W	(IT)
R1060	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1061	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1062	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1063	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1064	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1065	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R1066	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R1067	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1068	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R1069	1-216-049-00	METAL CHIP 1K 5% 1/10W	

Ref. No.	Part No.	Description	Remark
R1070	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1071	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R1072	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R1073	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1074	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1075	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1076	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1077	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1078	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1079	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1080	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1081	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1082	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1083	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1084	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1085	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1086	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1087	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1088	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1091	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R1092	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R1093	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R1094	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R1095	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1096	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1100	1-216-037-00	METAL CHIP 330 5% 1/10W	
R1101	1-216-037-00	METAL CHIP 330 5% 1/10W	
R1102	1-216-037-00	METAL CHIP 330 5% 1/10W	
R1115	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1116	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1130	1-216-017-00	METAL CHIP 47 5% 1/10W	
R1131	1-216-017-00	METAL CHIP 47 5% 1/10W	
R1132	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R1201	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
		< VARIABLE RESISTOR >	
RV501	1-223-197-11	RES, VAR, CARBON 50K (BALANCE)	
RV502	1-223-284-11	RES, VAR, CARBON 20K/20K (DBFB LEVEL)	
		< SWITCH >	
S1001	1-572-184-11	SWITCH, KEYBOARD (POWER)	
S1002	1-572-184-11	SWITCH, KEYBOARD (TIMER)	
S1009	1-572-184-11	SWITCH, KEYBOARD (+)	
S1010	1-572-184-11	SWITCH, KEYBOARD BAND	
S1011	1-572-184-11	SWITCH, KEYBOARD (-)	
S1012	1-572-184-11	SWITCH, KEYBOARD (FUNCTION)	
S1013	1-572-184-11	SWITCH, KEYBOARD (S-SUR)	
S1014	1-572-184-11	SWITCH, KEYBOARD (PRESET)	
S1015	1-572-184-11	SWITCH, KEYBOARD (EQ)	
S1016	1-572-184-11	SWITCH, KEYBOARD (TIMER REC)	

Ref. No.	Part No.	Description	Remark
S1017	1-572-184-11	SWITCH, KEYBOARD (MEMORY/NEXT)	
S1018	1-572-184-11	SWITCH, KEYBOARD (STEREO/MONO)	
S1019	1-572-184-11	SWITCH, KEYBOARD (+)	
S1020	1-572-184-11	SWITCH, KEYBOARD (-)	
S1021	1-572-184-11	SWITCH, KEYBOARD (DBFB)	
		< VIBRATOR >	
X1002	1-527-997-21	VIBRATOR, CRYSTAL (32.768kHz)	

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Ref. No.	Part No.	Description	Remark
*	1-638-308-11	LOADING BOARD *************	
		< CONNECTOR >	
CN201	1-580-918-11	HOUSING, CONNECTOR 5P	
		< SWITCH >	
S291	1-571-924-12	SWITCH, LEAF (LOAD OUT)	
S292	1-571-924-12	SWITCH, LEAF (LOAD IN)	

****

Ref. No.	Part No.	Description	Remark
*	1-634-841-14	LEAF SW-A BOARD ***************	
	3-343-419-01	HOLDER (S SENSER A)	
		< CONNECTOR >	
* CNP81	1-568-852-11	SOCKET, CONNECTOR 9P	
		< IC >	
IC81A	8-719-710-03	DIODE PHOTO REFLECTOR NJL5165K-B	
		< RESISTOR >	
R84	1-249-417-11	CARBON 1K 5% 1/4W	
R85	1-249-408-11	CARBON 180 5% 1/4W	
		< SWITCH >	
S81	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP DET)	
S82	1-571-281-21	SWITCH, LEAF (CrO2 DET)	
S86	1-571-281-21	SWITCH, LEAF (HALF DET)	

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Ref. No.	Part No.	Description	Remark
*	1-634-841-14	LEAF SW-B BOARD ***************	
	3-343-419-01	HOLDER (S SENSER A)	
		< CONNECTOR >	
* CNP81	1-568-852-11	SOCKET, CONNECTOR 9P	

LEAF SW-B | MAIN

< IC >

Ref. No.	Part No.	Description	Remark
IC81B	8-719-710-03	DIODE PHOTO REFLECTOR NJL5165K-B	

< RESISTOR >

Ref. No.	Part No.	Description				Remark
R81	1-249-414-11	CARBON	560	5%	1/4W	
R82	1-247-818-11	CARBON	300	5%	1/4W	
R83	1-247-834-11	CARBON	1.3K	5%	1/4W	
R84	1-249-417-11	CARBON	1K	5%	1/4W	
R85	1-249-408-11	CARBON	180	5%	1/4W	

< SWITCH >

Ref. No.	Part No.	Description	Remark
S81	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP DET)	
S82	1-571-281-21	SWITCH, LEAF (CrO2 DET)	
S83	1-571-281-21	SWITCH, LEAF (METAL HALF)	
S84	1-571-281-21	SWITCH, LEAF (ERASE PROOF)	
S85	1-571-281-21	SWITCH, LEAF (ERASE PROOF)	
S86	1-571-281-21	SWITCH, LEAF (HALF DET)	

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* A-4356-954-A MAIN BOARD, COMPLETE (AEP)

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* A-4356-959-A MAIN BOARD, COMPLETE (G, IT)

****

< CAPACITOR >

Ref. No.	Part No.	Description				Remark
C2	1-124-907-11	ELECT	10uF	20%	50V	
C3	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C4	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C5	1-101-005-00	CERAMIC	22000PF		50V	
C7	1-101-005-00	CERAMIC	22000PF		50V	
C8	1-101-005-00	CERAMIC	22000PF		50V	
C9	1-102-120-00	CERAMIC	0.0018uF	10%	50V	
C10	1-161-374-11	CERAMIC	0.0015uF	20%	50V	
C11	1-161-379-00	CERAMIC	0.01uF	20%	50V	(G, IT)
C26	1-102-953-00	CERAMIC	18PF	5%	50V	(G, IT)
C51	1-164-052-11	CERAMIC	18PF	5%	50V	
C52	1-164-052-11	CERAMIC	18PF	5%	50V	
C53	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C54	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C55	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C56	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C57	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C58	1-124-907-11	ELECT	10uF	20%	50V	
C59	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C60	1-124-477-11	ELECT	47uF	20%	25V	
C61	1-124-925-11	ELECT	2.2uF	20%	100V	
C62	1-136-153-00	FILM	0.01uF	5%	50V	
C63	1-124-463-00	ELECT	0.1uF	20%	50V	
C64	1-124-902-00	ELECT	0.47uF	20%	50V	
C65	1-136-157-00	FILM	0.022uF	5%	50V	
C66	1-136-157-00	FILM	0.022uF	5%	50V	
C81	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C82	1-124-472-11	ELECT	470uF	20%	10V	
C83	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C84	1-124-907-11	ELECT	10uF	20%	50V	
C85	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C86	1-162-282-31	CERAMIC	100PF	10%	50V	
C87	1-164-095-11	CERAMIC	0.01uF	10%	16V	
C88	1-124-907-11	ELECT	10uF	20%	50V	
C89	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C90	1-124-477-11	ELECT	47uF	20%	25V	
C91	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C92	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C93	1-161-375-00	CERAMIC	0.0022uF	20%	50V	
C94	1-161-375-00	CERAMIC	0.0022uF	20%	50V	
C95	1-124-903-11	ELECT	1uF	20%	50V	
C96	1-124-903-11	ELECT	1uF	20%	50V	
C97	1-124-903-11	ELECT	1uF	20%	50V	
C98	1-124-903-11	ELECT	1uF	20%	50V	
C99	1-136-154-00	FILM	0.012uF	5%	50V	(AEP)
C99	1-136-155-00	FILM	0.015uF	5%	50V	(G, IT)
C100	1-136-154-00	FILM	0.012uF	5%	50V	(AEP)
C100	1-136-155-00	FILM	0.015uF	5%	50V	(G, IT)
C101	1-124-907-11	ELECT	10uF	20%	50V	
C102	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C103	1-124-463-00	ELECT	0.1uF	20%	50V	
C104	1-126-160-11	ELECT	1uF	20%	50V	
C105	1-126-160-11	ELECT	1uF	20%	50V	
C106	1-124-903-11	ELECT	1uF	20%	50V	
C107	1-162-282-31	CERAMIC	100PF	10%	50V	(G, IT)
C108	1-162-211-31	CERAMIC	33PF	5%	50V	(AEP)
C108	1-162-291-31	CERAMIC	560PF	10%	50V	(G, IT)
C109	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C110	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C111	1-123-382-00	ELECT	3.3uF	20%	100V	
C112	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C113	1-161-379-00	CERAMIC	0.01uF	20%	50V	(G, IT)
C114	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C115	1-164-159-11	CERAMIC	0.1uF		50V	
C116	1-161-379-00	CERAMIC	0.01uF	20%	25V	

Ref. No.	Part No.	Description			Remark
C140	1-126-926-11	ELECT	1000uF	20%	10V
C141	1-162-282-31	CERAMIC	100PF	10%	50V
C142	1-162-282-31	CERAMIC	100PF	10%	50V
C201	1-162-282-31	CERAMIC	100PF	10%	50V
C202	1-162-215-31	CERAMIC	47PF	5%	50V
C205	1-124-927-11	ELECT	4.7uF	20%	100V
C206	1-162-286-31	CERAMIC	220PF	10%	50V
C207	1-124-254-00	ELECT	0.68uF	20%	50V
C208	1-124-252-00	ELECT	0.33uF	20%	50V
C209	1-124-252-00	ELECT	0.33uF	20%	50V
C210	1-136-167-00	FILM	0.15uF	5%	50V
C211	1-136-166-00	FILM	0.12uF	5%	50V
C212	1-136-162-00	FILM	0.056uF	5%	50V
C213	1-136-161-00	FILM	0.047uF	5%	50V
C214	1-136-157-00	FILM	0.022uF	5%	50V
C215	1-136-156-00	FILM	0.018uF	5%	50V
C216	1-130-482-00	MYLAR	0.0082uF	5%	50V
C217	1-130-481-00	MYLAR	0.0068uF	5%	50V
C218	1-130-477-00	MYLAR	0.0033uF	5%	50V
C219	1-136-157-00	FILM	0.022uF	5%	50V
C220	1-126-096-11	ELECT	10uF	20%	35V
C221	1-162-286-31	CERAMIC	220PF	10%	50V
C222	1-162-294-31	CERAMIC	0.001uF	10%	50V
C224	1-124-465-00	ELECT	0.47uF	20%	50V
C225	1-124-464-11	ELECT	0.22uF	20%	50V
C227	1-164-159-11	CERAMIC	0.1uF		50V
C228	1-124-907-11	ELECT	10uF	20%	50V
C230	1-161-379-00	CERAMIC	0.01uF	20%	50V (G, IT)
C231	1-161-379-00	CERAMIC	0.01uF	20%	25V
C232	1-161-379-00	CERAMIC	0.01uF	20%	50V (G, IT)
C241	1-161-379-00	CERAMIC	0.01uF	20%	25V
C242	1-161-379-00	CERAMIC	0.01uF	20%	25V
C243	1-161-379-00	CERAMIC	0.01uF	20%	25V
C247	1-124-925-11	ELECT	2.2uF	20%	100V
C251	1-162-282-31	CERAMIC	100PF	10%	50V
C252	1-162-215-31	CERAMIC	47PF	5%	50V
C255	1-124-927-11	ELECT	4.7uF	20%	100V
C256	1-162-286-31	CERAMIC	220PF	10%	50V
C257	1-124-254-00	ELECT	0.68uF	20%	50V
C258	1-124-252-00	ELECT	0.33uF	20%	50V
C259	1-124-252-00	ELECT	0.33uF	20%	50V
C260	1-136-167-00	FILM	0.15uF	5%	50V
C261	1-136-166-00	FILM	0.12uF	5%	50V
C262	1-136-162-00	FILM	0.056uF	5%	50V
C263	1-136-161-00	FILM	0.047uF	5%	50V
C264	1-136-157-00	FILM	0.022uF	5%	50V
C265	1-136-156-00	FILM	0.018uF	5%	50V
C266	1-130-482-00	MYLAR	0.0082uF	5%	50V
C267	1-130-481-00	MYLAR	0.0068uF	5%	50V

Ref. No.	Part No.	Description			Remark
C268	1-130-477-00	MYLAR	0.0033uF	5%	50V
C269	1-136-157-00	FILM	0.022uF	5%	50V
C270	1-126-096-11	ELECT	10uF	20%	35V
C271	1-162-286-31	CERAMIC	220PF	10%	50V
C272	1-162-294-31	CERAMIC	0.001uF	10%	50V
C274	1-124-465-00	ELECT	0.47uF	20%	50V
C275	1-124-464-11	ELECT	0.22uF	20%	50V
C277	1-164-159-11	CERAMIC	0.1uF		50V
C281	1-161-379-00	CERAMIC	0.01uF	20%	25V
C290	1-164-159-11	CERAMIC	0.1uF		50V
C291	1-164-159-11	CERAMIC	0.1uF		50V
C292	1-164-159-11	CERAMIC	0.1uF		50V
C293	1-164-159-11	CERAMIC	0.1uF		50V
C301	1-162-282-31	CERAMIC	100PF	10%	50V (AEP)
C301	1-162-288-31	CERAMIC	330PF	10%	50V (G, IT)
C302	1-162-282-31	CERAMIC	100PF	10%	50V
C306	1-124-903-11	ELECT	1uF	20%	50V
C307	1-164-159-11	CERAMIC	0.1uF		50V
C351	1-162-282-31	CERAMIC	100PF	10%	50V (AEP)
C351	1-162-288-31	CERAMIC	330PF	10%	50V (G, IT)
C352	1-162-282-31	CERAMIC	100PF	10%	50V
C356	1-124-903-11	ELECT	1uF	20%	50V
C357	1-164-159-11	CERAMIC	0.1uF		50V
C805	1-164-159-11	CERAMIC	0.1uF		50V (G, IT)
C855	1-164-159-11	CERAMIC	0.1uF		50V (G, IT)
C951	1-124-907-11	ELECT	10uF	20%	50V
C952	1-126-160-11	ELECT	1uF	20%	50V
C953	1-124-903-11	ELECT	1uF	20%	50V
C954	1-124-120-11	ELECT	220uF	20%	25V
C1001	1-162-282-31	CERAMIC	100PF	10%	50V (G, IT)
C2002	1-124-907-11	ELECT	10uF	20%	50V
C2052	1-124-907-11	ELECT	10uF	20%	50V
C9001	1-124-907-11	ELECT	10uF	20%	50V
C9002	1-124-034-51	ELECT	33uF	20%	16V

< FILTER >

Ref. No.	Part No.	Description	Remark
CF1	1-567-389-11	FILTER, CERAMIC (10.7MHz)	
CF2	1-567-389-11	FILTER, CERAMIC (10.7MHz)	(G, IT
CF81	1-567-389-11	FILTER, CERAMIC (10.7MHz)	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
* CN201	1-569-155-11	PLUG, CONNECTOR 10P	
* CN202	1-569-155-11	PLUG, CONNECTOR 10P	
CN203	1-695-026-11	SOCKET, CONNECTOR 10P	

MAIN

Ref. No.	Part No.	Description	Remark
* CN204	1-568-828-11	SOCKET, CONNECTOR 9P	
* CN205	1-566-973-11	PIN, CONNECTOR (PC BOARD) 8P	
* CN206	1-566-973-11	PIN, CONNECTOR (PC BOARD) 8P	
* CN207	1-573-085-11	CONNECTOR, FPC (NON ZIF) 19P	
* CN251	1-564-509-11	PLUG, CONNECTOR 6P	
* CN901	1-564-511-11	PLUG, CONNECTOR 8P	
* CN902	1-564-509-11	PLUG, CONNECTOR 6P	
		< DIODE >	
D81	8-719-987-63	DIODE 1N4148M	
D202	8-719-987-63	DIODE 1N4148M	
D206	8-719-933-33	DIODE HZS6A1L	
D208	8-719-987-63	DIODE 1N4148M	
D401	8-719-987-63	DIODE 1N4148M	
D821	8-719-815-85	DIODE 1S1585	
D822	8-719-815-85	DIODE 1S1585	
D914	8-719-987-63	DIODE 1N4148M	
D921	8-719-987-63	DIODE 1N4148M	
		< FERRITE BEAD >	
* FB801	1-410-858-21	INDUCTOR 0uH (G, IT)	
* FB802	1-410-858-21	INDUCTOR 0uH (G, IT)	
		< FRONT END >	
FE1	1-465-673-11	FRONT END (2 BAND) (AEP)	
FE1	1-465-007-11	FRONT END (FM) (4 GANG) (G, IT)	
FE2	1-236-462-11	ENCAPSULATED COMPONENT	
FE3	1-236-463-11	ENCAPSULATED COMPONENT	
		< FILTER >	
FL81	1-236-465-11	ENCAPSULATED COMPONENT (G, IT)	
		< IC >	
IC51	8-759-820-91	IC LC7218	
IC81	8-759-821-45	IC LA1851N	
IC201	8-759-603-14	IC M5229P	
IC231	8-759-000-49	IC uPD4066BC	
IC232	8-759-634-51	IC M5218AP	
IC234	8-759-822-26	IC LC7522K	
IC251	8-759-603-14	IC M5229P	
IC302	8-759-000-48	IC MC14052BCP	
IC902	8-759-821-93	IC LA5601	
IC9001	8-759-520-90	IC PST572E	
		< IFT >	
IFT81	1-404-713-11	TRANSFORMER, IF	
IFT82	1-404-807-11	TRANSFORMER, DISCRIMINATOR	
		< JACK >	
J301	1-569-181-11	JACK, PIN 2P (VIDEO/AUX)	

Ref. No.	Part No.	Description	Remark
		< COIL >	
L1	1-408-425-00	INDUCTOR 220uH	
L81	1-408-399-00	INDUCTOR 1.5mH	
L83	1-410-489-11	INDUCTOR 390uH	
L1001	1-410-521-11	INDUCTOR 100uH (G, IT)	
		< FILTER >	
LPF81	1-235-164-00	FILTER, LOW PASS	
LPF82	1-235-164-00	FILTER, LOW PASS	
		< TRANSISTOR >	
Q1	8-729-620-19	TRANSISTOR 2SC2724-CD	
Q2	8-729-620-19	TRANSISTOR 2SC2724-CD (G, IT)	
Q4	8-729-900-61	TRANSISTOR DTA114ES	
Q5	8-729-900-80	TRANSISTOR DTC114ES	
Q7	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q8	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q9	8-729-900-80	TRANSISTOR DTC114ES	
Q10	8-729-900-74	TRANSISTOR DTC143TS	
Q51	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q52	8-729-201-83	TRANSISTOR 2SC3112	
Q53	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q54	8-729-201-83	TRANSISTOR 2SC3112	
Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q102	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q103	8-729-900-80	TRANSISTOR DTC114ES	
Q201	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q202	8-729-141-26	TRANSISTOR 2SC3622A-LK	
Q232	8-729-900-63	TRANSISTOR DTA124ES	
Q233	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q234	8-729-900-63	TRANSISTOR DTA124ES	
Q237	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q251	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q252	8-729-141-26	TRANSISTOR 2SC3622A-LK	
Q301	8-729-900-61	TRANSISTOR DTA114ES	
Q302	8-729-900-61	TRANSISTOR DTA114ES	
Q802	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q911	8-729-900-80	TRANSISTOR DTC114ES	
Q9001	8-729-900-80	TRANSISTOR DTC114ES	
Q9002	8-729-900-80	TRANSISTOR DTC114ES	
Q9003	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		< RESISTOR >	
R1	1-249-411-11	CARBON 330 5% 1/4W	
R2	1-249-411-11	CARBON 330 5% 1/4W	
R3	1-247-891-00	CARBON 330K 5% 1/4W	
R4	1-249-411-11	CARBON 330 5% 1/4W	
R5	1-247-891-00	CARBON 330K 5% 1/4W (G, IT)	
R6	1-249-411-11	CARBON 330 5% 1/4W (G, IT)	
R7	1-249-405-11	CARBON 100 5% 1/4W (AEP)	

Ref. No.	Part No.	Description				Remark
R7	1-249-407-11	CARBON	150	5%	1/4W	(G, IT)
R8	1-249-441-11	CARBON	100K	5%	1/4W	
R9	1-249-437-11	CARBON	47K	5%	1/4W	
R10	1-249-429-11	CARBON	10K	5%	1/4W	
R11	1-249-421-11	CARBON	2.2K	5%	1/4W	
R12	1-249-421-11	CARBON	2.2K	5%	1/4W	
R13	1-249-433-11	CARBON	22K	5%	1/4W	
R14	1-249-432-11	CARBON	18K	5%	1/4W	
R15	1-247-903-00	CARBON	1M	5%	1/4W	
R20	1-249-425-11	CARBON	4.7K	5%	1/4W	
R31	1-249-429-11	CARBON	10K	5%	1/4W	
R32	1-249-429-11	CARBON	10K	5%	1/4W	
R41	1-249-429-11	CARBON	10K	5%	1/4W	
R50	1-249-417-11	CARBON	1K	5%	1/4W	
R51	1-249-417-11	CARBON	1K	5%	1/4W	
R52	1-249-417-11	CARBON	1K	5%	1/4W	
R53	1-249-417-11	CARBON	1K	5%	1/4W	
R54	1-249-417-11	CARBON	1K	5%	1/4W	
R55	1-249-425-11	CARBON	4.7K	5%	1/4W	
R56	1-249-405-11	CARBON	100	5%	1/4W	
R57	1-249-401-11	CARBON	47	5%	1/4W	
R58	1-249-423-11	CARBON	3.3K	5%	1/4W	
R59	1-249-414-11	CARBON	560	5%	1/4W	
R60	1-249-417-11	CARBON	1K	5%	1/4W	
R61	1-249-410-11	CARBON	270	5%	1/4W	
R62	1-249-425-11	CARBON	4.7K	5%	1/4W	
R63	1-249-421-11	CARBON	2.2K	5%	1/4W	
R64	1-249-425-11	CARBON	4.7K	5%	1/4W	
R65	1-249-425-11	CARBON	4.7K	5%	1/4W	
R66	1-249-405-11	CARBON	100	5%	1/4W	
R67	1-249-423-11	CARBON	3.3K	5%	1/4W	
R68	1-249-414-11	CARBON	560	5%	1/4W	
R69	1-249-417-11	CARBON	1K	5%	1/4W	
R70	1-249-410-11	CARBON	270	5%	1/4W	
R71	1-249-433-11	CARBON	22K	5%	1/4W	
R72	1-249-421-11	CARBON	2.2K	5%	1/4W	
R73	1-249-425-11	CARBON	4.7K	5%	1/4W	
R74	1-249-425-11	CARBON	4.7K	5%	1/4W	
R81	1-249-433-11	CARBON	22K	5%	1/4W	
R82	1-249-417-11	CARBON	1K	5%	1/4W	
R83	1-249-399-11	CARBON	33	5%	1/4W	
R84	1-249-429-11	CARBON	10K	5%	1/4W	
R85	1-249-429-11	CARBON	10K	5%	1/4W	
R86	1-249-437-11	CARBON	47K	5%	1/4W	
R87	1-249-409-11	CARBON	220	5%	1/4W	
R88	1-249-429-11	CARBON	10K	5%	1/4W	
R89	1-249-429-11	CARBON	10K	5%	1/4W	
R90	1-249-421-11	CARBON	2.2K	5%	1/4W	
R91	1-249-421-11	CARBON	2.2K	5%	1/4W	
R92	1-247-891-00	CARBON	330K	5%	1/4W	

Ref. No.	Part No.	Description				Remark
R93	1-247-891-00	CARBON	330K	5%	1/4W	
R94	1-249-420-11	CARBON	1.8K	5%	1/4W	
R95	1-249-420-11	CARBON	1.8K	5%	1/4W	
R96	1-249-425-11	CARBON	4.7K	5%	1/4W	
R97	1-249-425-11	CARBON	4.7K	5%	1/4W	
R98	1-249-404-00	CARBON	82	5%	1/4W	
R99	1-249-417-11	CARBON	1K	5%	1/4W	(AEP)
R99	1-249-420-11	CARBON	1.8K	5%	1/4W	(G, IT)
R100	1-247-848-11	CARBON	5.1K	5%	1/4W	
R102	1-249-430-11	CARBON	12K	5%	1/4W	(AEP)
R103	1-249-428-11	CARBON	8.2K	5%	1/4W	
R104	1-249-435-11	CARBON	33K	5%	1/4W	
R107	1-249-430-11	CARBON	12K	5%	1/4W	(G, IT)
R108	1-249-417-11	CARBON	1K	5%	1/4W	
R142	1-249-417-11	CARBON	1K	5%	1/4W	
R143	1-249-431-11	CARBON	15K	5%	1/4W	
R144	1-249-393-11	CARBON	10	5%	1/4W	
R200	1-247-887-00	CARBON	220K	5%	1/4W	
R201	1-249-429-11	CARBON	10K	5%	1/4W	
R202	1-247-862-11	CARBON	20K	5%	1/4W	
R203	1-247-862-11	CARBON	20K	5%	1/4W	
R206	1-249-427-11	CARBON	6.8K	5%	1/4W	
R209	1-247-903-00	CARBON	1M	5%	1/4W	
R210	1-247-903-00	CARBON	1M	5%	1/4W	
R211	1-247-903-00	CARBON	1M	5%	1/4W	
R212	1-247-903-00	CARBON	1M	5%	1/4W	
R213	1-247-903-00	CARBON	1M	5%	1/4W	
R214	1-247-903-00	CARBON	1M	5%	1/4W	
R215	1-249-423-11	CARBON	3.3K	5%	1/4W	
R216	1-247-903-00	CARBON	1M	5%	1/4W	
R217	1-249-427-11	CARBON	6.8K	5%	1/4W	
R221	1-249-441-11	CARBON	100K	5%	1/4W	
R222	1-249-428-11	CARBON	8.2K	5%	1/4W	
R227	1-247-887-00	CARBON	220K	5%	1/4W	
R228	1-247-887-00	CARBON	220K	5%	1/4W	
R233	1-249-441-11	CARBON	100K	5%	1/4W	
R235	1-247-887-00	CARBON	220K	5%	1/4W	
R236	1-249-417-11	CARBON	1K	5%	1/4W	
R237	1-247-862-11	CARBON	20K	5%	1/4W	
R241	1-249-433-11	CARBON	22K	5%	1/4W	
R242	1-249-417-11	CARBON	1K	5%	1/4W	
R243	1-249-417-11	CARBON	1K	5%	1/4W	
R244	1-247-816-11	CARBON	240	5%	1/4W	
R245	1-249-433-11	CARBON	22K	5%	1/4W	
R246	1-247-903-00	CARBON	1M	5%	1/4W	
R247	1-247-854-11	CARBON	9.1K	5%	1/4W	
R248	1-249-437-11	CARBON	47K	5%	1/4W	
R250	1-247-887-00	CARBON	220K	5%	1/4W	
R251	1-249-429-11	CARBON	10K	5%	1/4W	
R252	1-247-862-11	CARBON	20K	5%	1/4W	

MAIN | MIC HP

Ref. No.	Part No.	Description				Remark
R253	1-247-862-11	CARBON	20K	5%	1/4W	
R256	1-249-427-11	CARBON	6.8K	5%	1/4W	
R259	1-247-903-00	CARBON	1M	5%	1/4W	
R260	1-247-903-00	CARBON	1M	5%	1/4W	
R261	1-247-903-00	CARBON	1M	5%	1/4W	
R262	1-247-903-00	CARBON	1M	5%	1/4W	
R263	1-247-903-00	CARBON	1M	5%	1/4W	
R264	1-247-903-00	CARBON	1M	5%	1/4W	
R265	1-249-423-11	CARBON	3.3K	5%	1/4W	
R266	1-247-903-00	CARBON	1M	5%	1/4W	
R267	1-249-427-11	CARBON	6.8K	5%	1/4W	
R271	1-249-441-11	CARBON	100K	5%	1/4W	
R272	1-249-428-11	CARBON	8.2K	5%	1/4W	
R277	1-247-887-00	CARBON	220K	5%	1/4W	
R278	1-247-887-00	CARBON	220K	5%	1/4W	
R283	1-249-441-11	CARBON	100K	5%	1/4W	
R285	1-247-887-00	CARBON	220K	5%	1/4W	
R287	1-247-862-11	CARBON	20K	5%	1/4W	
R290	1-249-437-11	CARBON	47K	5%	1/4W	
R294	1-249-442-11	CARBON	510	5%	1/4W	
R297	1-249-433-11	CARBON	22K	5%	1/4W	
R298	1-249-441-11	CARBON	100K	5%	1/4W	
R301	1-249-417-11	CARBON	1K	5%	1/4W	
R302	1-249-437-11	CARBON	47K	5%	1/4W	
R306	1-249-417-11	CARBON	1K	5%	1/4W	
R307	1-249-437-11	CARBON	47K	5%	1/4W	
R308	1-249-417-11	CARBON	1K	5%	1/4W	
R309	1-249-417-11	CARBON	1K	5%	1/4W	
R310	1-249-417-11	CARBON	1K	5%	1/4W	
R340	1-249-433-11	CARBON	22K	5%	1/4W	
R341	1-249-433-11	CARBON	22K	5%	1/4W	
R351	1-249-417-11	CARBON	1K	5%	1/4W	
R352	1-249-437-11	CARBON	47K	5%	1/4W	
R356	1-249-417-11	CARBON	1K	5%	1/4W	
R357	1-249-437-11	CARBON	47K	5%	1/4W	
R358	1-249-417-11	CARBON	1K	5%	1/4W	
R359	1-249-417-11	CARBON	1K	5%	1/4W	
R360	1-249-417-11	CARBON	1K	5%	1/4W	
R805	1-249-482-11	CARBON	4.7	5%	1/2W	(G, IT)
R831	1-249-433-11	CARBON	22K	5%	1/4W	
R832	1-249-417-11	CARBON	1K	5%	1/4W	
R855	1-249-482-11	CARBON	4.7	5%	1/2W	(G, IT)
R923	1-249-429-11	CARBON	10K	5%	1/4W	
⚠R924	1-217-637-00	FUSIBLE	1	5%	1/4W	F
R2001	1-249-441-11	CARBON	100K	5%	1/4W	
R2002	1-249-425-11	CARBON	4.7K	5%	1/4W	
R2003	1-249-433-11	CARBON	22K	5%	1/4W	
R2004	1-249-433-11	CARBON	22K	5%	1/4W	
R2052	1-249-425-11	CARBON	4.7K	5%	1/4W	
R9001	1-249-429-11	CARBON	10K	5%	1/4W	

Ref. No.	Part No.	Description				Remark
R9002	1-249-429-11	CARBON	10K	5%	1/4W	
R9003	1-249-429-11	CARBON	10K	5%	1/4W	
R9004	1-249-429-11	CARBON	10K	5%	1/4W	
		< VARIABLE RESISTOR >				
RV81	1-238-601-11	RES, ADJ, CARBON 22K (FM TUNED INDICATOR LIGHTING LEVEL)				
RV82	1-238-601-11	RES, ADJ, CARBON 22K (AM TUNED INDICATOR LIGHTING LEVEL)				
		< RELAY >				
RY801	1-515-790-11	RELAY				
		< TERMINAL >				
* TB1	1-537-138-31	TERMINAL BOARD (ANT)				
* TB3	4-942-204-01	PLATE, GROUND				
		< TERMINAL >				
TM301	1-537-238-11	TERMINAL BOARD (SPEAKER)				
		< TEST PIN >				
* TP81	1-568-449-11	HOUSING, CONNECTOR(PC BOARD)3P				
		< VIBRATOR >				
X51	1-579-585-11	VIBRATOR, CRYSTAL (7.2MHz)				
X81	1-577-075-11	OSCILLATOR, CERAMIC (456kHz)				

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Ref. No.	Part No.	Description				Remark
*	A-4356-379-A	MIC HP BOARD, COMPLETE (AEP) **********************				
*	A-4356-960-A	MIC HP BOARD, COMPLETE (G, IT)) **********************				
		< CAPACITOR >				
C623	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C624	1-124-903-11	ELECT	1uF	20%	50V	
C625	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C626	1-136-162-00	FILM	0.056uF	5%	50V	
C631	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C632	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	(AEP)
C632	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	(G, IT)
C633	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	(AEP)
C633	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V	(G, IT)
C634	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	(G, IT)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
C635	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V (G, IT)
C636	1-126-157-11	ELECT	10uF	20%	16V
C637	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C638	1-126-101-11	ELECT	100uF	20%	16V
C639	1-126-157-11	ELECT	10uF	20%	16V
C640	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C681	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C682	1-163-117-00	CERAMIC CHIP	100PF	5%	50V (AEP)
C682	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V (G, IT)
C683	1-163-005-11	CERAMIC CHIP	470PF	10%	50V (AEP)
C683	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V (G, IT)
C684	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V (G, IT)
C686	1-126-157-11	ELECT	10uF	20%	16V
C687	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C689	1-126-157-11	ELECT	10uF	20%	16V
C691	1-124-604-00	ELECT	330uF	20%	10V
C692	1-124-604-00	ELECT	330uF	20%	10V

< CONNECTOR >

* CN601	1-568-454-11	PIN, CONNECTOR (PC BOARD) 9P
* CN602	1-573-100-11	SOCKET, CONNECTOR 4P

< IC >

IC602	8-759-636-55	IC	M5218AFP

< JACK >

J601	1-562-837-21	JACK (HEADPHONES)
J602	1-562-837-21	JACK (MIX MIC)

< TRANSISTOR >

Q602	8-729-119-78	TRANSISTOR	2SC2785-HFE

< RESISTOR >

R616	1-216-045-00	METAL CHIP	680	5%	1/10W
R617	1-216-121-00	METAL CHIP	1M	5%	1/10W
R618	1-216-060-00	METAL CHIP	3K	5%	1/10W
R619	1-216-025-00	METAL CHIP	100	5%	1/10W
R623	1-216-025-00	METAL CHIP	100	5%	1/10W
R626	1-216-049-00	METAL CHIP	1K	5%	1/10W
R627	1-216-089-00	METAL CHIP	47K	5%	1/10W
R628	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R629	1-216-089-00	METAL CHIP	47K	5%	1/10W
R630	1-216-017-00	METAL CHIP	47	5%	1/10W
R632	1-216-097-00	METAL CHIP	100K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R634	1-216-035-00	METAL CHIP	270	5%	1/10W
R635	1-216-089-00	METAL CHIP	47K	5%	1/10W
R637	1-216-105-00	METAL CHIP	220K	5%	1/10W
R676	1-216-049-00	METAL CHIP	1K	5%	1/10W
R677	1-216-089-00	METAL CHIP	47K	5%	1/10W
R678	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R679	1-216-089-00	METAL CHIP	47K	5%	1/10W
R687	1-216-105-00	METAL CHIP	220K	5%	1/10W
R688	1-216-017-00	METAL CHIP	47	5%	1/10W
R691	1-216-013-00	METAL CHIP	33	5%	1/10W
R692	1-216-013-00	METAL CHIP	33	5%	1/10W

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* 1-645-622-12 POWER (B) BOARD
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* 1-533-213-31 HOLDER, FUSE

< CONNECTOR >

* CN851	1-564-321-00	PIN, CONNECTOR 2P
* CN853	1-564-687-11	PIN, CONNECTOR 3P

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* A-4356-956-A POWER (A) BOARD, COMPLETE (AEP)
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* A-4356-964-A POWER BOARD, COMPLETE (G, IT)
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< CAPACITOR >

C801	1-124-907-11	ELECT	10uF	20%	50V
C802	1-162-282-31	CERAMIC	100PF	10%	50V
C803	1-124-443-00	ELECT	100uF	20%	10V
C811	1-136-163-00	FILM	0.068uF	5%	50V
C812	1-136-163-00	FILM	0.068uF	5%	50V
C821	1-126-176-11	ELECT	220uF	20%	10V
C822	1-126-176-11	ELECT	220uF	20%	10V
C824	1-124-443-00	ELECT	100uF	20%	10V
C851	1-124-907-11	ELECT	10uF	20%	50V
C852	1-162-282-31	CERAMIC	100PF	10%	50V
C853	1-124-443-00	ELECT	100uF	20%	10V
C861	1-136-163-00	FILM	0.068uF	5%	50V
C862	1-136-163-00	FILM	0.068uF	5%	50V
C871	1-126-258-11	ELECT	4700uF	20%	56V
C872	1-126-258-11	ELECT	4700uF	20%	56V
C875	1-126-233-11	ELECT	22uF	20%	50V
C876	1-124-572-11	ELECT	100uF	20%	63V
C877	1-126-233-11	ELECT	22uF	20%	50V
C878	1-124-572-11	ELECT	100uF	20%	63V
C881	1-162-286-31	CERAMIC	220PF	10%	50V

POWER

Ref. No.	Part No.	Description			Remark
C882	1-162-286-31	CERAMIC	220PF	10%	50V
C883	1-162-207-31	CERAMIC	22PF	5%	50V
C884	1-162-207-31	CERAMIC	22PF	5%	50V
C885	1-126-233-11	ELECT	22uF	20%	50V
C886	1-126-233-11	ELECT	22uF	20%	50V
C899	1-136-157-00	FILM	0.022uF	5%	50V
C901	1-124-564-11	ELECT	4700uF	20%	25V
C902	1-124-927-11	ELECT	4.7uF	20%	100V
C903	1-124-927-11	ELECT	4.7uF	20%	100V
C904	1-126-233-11	ELECT	22uF	20%	50V
C905	1-124-927-11	ELECT	4.7uF	20%	100V
C906	1-124-927-11	ELECT	4.7uF	20%	100V
C908	1-124-907-11	ELECT	10uF	20%	50V
C909	1-124-907-11	ELECT	10uF	20%	50V
C911	1-124-572-11	ELECT	100uF	20%	63V
C912	1-124-910-11	ELECT	47uF	20%	50V
C913	1-161-379-00	CERAMIC	0.01uF	20%	25V
C915	1-124-927-11	ELECT	4.7uF	20%	100V
C916	1-124-927-11	ELECT	4.7uF	20%	100V
C922	1-124-564-11	ELECT	4700uF	20%	25V
C923	1-124-252-00	ELECT	0.33uF	20%	50V
C924	1-124-464-11	ELECT	0.22uF	20%	50V
C930	1-124-907-11	ELECT	10uF	20%	50V
C931	1-124-913-11	ELECT	470uF	20%	50V
C932	1-126-233-11	ELECT	22uF	20%	50V
C933	1-124-913-11	ELECT	470uF	20%	50V
C934	1-126-233-11	ELECT	22uF	20%	50V
C999	1-101-005-00	CERAMIC	22000PF		50V
		< CONNECTOR >			
* CN802	1-564-523-11	PLUG, CONNECTOR 8P			
* CN803	1-564-521-11	PLUG, CONNECTOR 6P			
* CN804	1-695-069-21	CONNECTOR, FFC/FPC 11P			
* CN854	1-560-338-00	PIN, CONNECTOR 7P			
		< COMPOSITION CIRCUIT BLOCK >			
CP801	1-102-394-11	CERAMIC	0.01uF		250V
		< DIODE >			
D802	8-719-815-85	DIODE	1S1585		
D810	8-719-510-68	DIODE	D5SBA20F01		
D811	8-719-815-85	DIODE	1S1585		
D861	8-719-815-85	DIODE	1S1585		
D901	8-719-200-02	DIODE	10E2		
D902	8-719-200-02	DIODE	10E2		
D904	8-719-933-41	DIODE	HZS6C3L		
D906	8-719-200-02	DIODE	10E2		
D907	8-719-011-22	DIODE	UZ-36BSB		
D909	8-719-001-15	DIODE	UZL-9M2		
D910	8-719-987-63	DIODE	1N4148M		

Ref. No.	Part No.	Description				Remark
D915	8-719-987-63	DIODE	1N4148M			
D916	8-719-987-63	DIODE	1N4148M			
D923	8-719-200-02	DIODE	10E2			
D924	8-719-200-02	DIODE	10E2			
D931	8-719-200-02	DIODE	10E2			
D932	8-719-200-02	DIODE	10E2			
D933	8-719-200-02	DIODE	10E2			
D934	8-719-200-02	DIODE	10E2			
		< CONNECTOR >				
* DIP801	1-562-327-00	SOCKET, CONNECTOR 3P				
* DIP802	1-562-327-00	SOCKET, CONNECTOR 3P				
* DIP803	1-562-327-00	SOCKET, CONNECTOR 3P				
* DIP804	1-562-327-00	SOCKET, CONNECTOR 3P				
		< IC >				
IC801	8-749-922-97	IC	STK401-110			
IC851	8-759-111-68	IC	uPC1237HA			
IC901	8-759-602-66	IC	M5230L-A			
		< TRANSISTOR >				
Q801	8-729-900-63	TRANSISTOR	DTA124ES			
Q811	8-729-140-84	TRANSISTOR	2SC1841-PAFAEA			
Q861	8-729-140-84	TRANSISTOR	2SC1841-PAFAEA			
Q901	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q903	8-729-209-15	TRANSISTOR	2SD2012			
Q904	8-729-141-83	TRANSISTOR	2SA473			
Q905	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q906	8-729-209-15	TRANSISTOR	2SD2012			
Q907	8-729-209-15	TRANSISTOR	2SD2012			
Q908	8-729-209-15	TRANSISTOR	2SD2012			
		< RESISTOR >				
R801	1-249-417-11	CARBON	1K	5%	1/4W	
R802	1-249-438-11	CARBON	56K	5%	1/4W	
R803	1-249-414-11	CARBON	560	5%	1/4W	
R804	1-249-438-11	CARBON	56K	5%	1/4W	
⚠R811	1-217-156-00	RES, METAL PLATE	0.22		5W	F
R812	1-249-417-11	CARBON	1K	5%	1/4W	
R813	1-249-431-11	CARBON	15K	5%	1/4W	
R814	1-249-441-11	CARBON	100K	5%	1/4W	
R815	1-247-727-11	CARBON	10	5%	1/2W	
R816	1-249-438-11	CARBON	56K	5%	1/4W	
R821	1-215-892-11	METAL OXIDE	1K	5%	2W	
R822	1-249-487-11	CARBON	15K	5%	1/2W	
R823	1-249-429-11	CARBON	10K	5%	1/4W	
R824	1-249-432-11	CARBON	18K	5%	1/4W	
R825	1-249-441-11	CARBON	100K	5%	1/4W	
R826	1-249-437-11	CARBON	47K	5%	1/4W	
⚠R831	1-219-134-11	FUSIBLE	0.1	5%	1/4W	F
R851	1-249-417-11	CARBON	1K	5%	1/4W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description				Remark
R852	1-249-438-11	CARBON	56K	5%	1/4W	
R853	1-249-414-11	CARBON	560	5%	1/4W	
R854	1-249-438-11	CARBON	56K	5%	1/4W	
⚠R861	1-217-156-00	RES, METAL PLATE	0.22		5W	F
R862	1-249-417-11	CARBON	1K	5%	1/4W	
R863	1-249-431-11	CARBON	15K	5%	1/4W	
R864	1-249-441-11	CARBON	100K	5%	1/4W	
R865	1-247-727-11	CARBON	10	5%	1/2W	
R866	1-249-437-11	CARBON	47K	5%	1/4W	
⚠R879	1-212-881-11	FUSIBLE	100	5%	1/4W	F
⚠R880	1-212-881-11	FUSIBLE	100	5%	1/4W	F
⚠R881	1-219-134-11	FUSIBLE	0.1	5%	1/4W	F
⚠R889	1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
⚠R902	1-219-108-11	FUSIBLE	1.5	5%	1W	F
R903	1-247-903-00	CARBON	1M	5%	1/4W	
R904	1-249-405-11	CARBON	100	5%	1/4W	
R905	1-249-432-11	CARBON	18K	5%	1/4W	
R906	1-247-842-11	CARBON	3K	5%	1/4W	
R907	1-249-431-11	CARBON	15K	5%	1/4W	
R908	1-247-854-11	CARBON	9.1K	5%	1/4W	
⚠R909	1-219-153-11	FUSIBLE	10	5%	1/4W	F
R910	1-249-417-11	CARBON	1K	5%	1/4W	
R911	1-249-417-11	CARBON	1K	5%	1/4W	
⚠R913	1-212-865-00	FUSIBLE	22	5%	1/4W	F
R914	1-249-423-11	CARBON	3.3K	5%	1/4W	
R921	1-249-429-11	CARBON	10K	5%	1/4W	
R922	1-249-441-11	CARBON	100K	5%	1/4W	
R927	1-249-417-11	CARBON	1K	5%	1/4W	
R928	1-249-417-11	CARBON	1K	5%	1/4W	
⚠R931	1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
R952	1-247-903-00	CARBON	1M	5%	1/4W	
R953	1-247-903-00	CARBON	1M	5%	1/4W	
R954	1-247-903-00	CARBON	1M	5%	1/4W	
R955	1-249-429-11	CARBON	10K	5%	1/4W	
⚠R999	9-910-999-33	FUSIBLE	0.22	5%	1/4W	F

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*	A-4356-381-A	SWITCH BOARD, COMPLETE (AEP) **********************
*	A-4356-961-A	SWITCH BOARD, COMPLETE (G, IT) **********************

< CONNECTOR >

Ref.No.	Part No.	Description
* CN1501	1-691-894-11	CONNECTOR, FFC/FPC 15P

< DIODE >

Ref.No.	Part No.	Description		Remark
D1501	8-719-026-66	DIODE	SML1460E (◁)	
D1502	8-719-026-66	DIODE	SML1460E (▷)	
D1503	8-719-026-64	DIODE	SML1260S (HIGH SPEED)	
D1504	8-719-026-64	DIODE	SML1260S (CD SYNC)	
D1506	8-719-026-68	DIODE	SML1960A (PAUSE)	
D1507	8-719-026-66	DIODE	SML1460E (◁)	
D1508	8-719-026-66	DIODE	SML1460E (▷)	
D1509	8-719-026-64	DIODE	SML1260S (REC)	

< RESISTOR >

Ref.No.	Part No.	Description				Remark
R1028	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R1501	1-216-041-00	METAL CHIP	470	5%	1/10W	
R1502	1-216-045-00	METAL CHIP	680	5%	1/10W	
R1503	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R1504	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R1505	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R1506	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R1507	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R1508	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R1509	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R1510	1-216-029-00	METAL CHIP	150	5%	1/10W	
R1511	1-216-033-00	METAL CHIP	220	5%	1/10W	
R1512	1-216-037-00	METAL CHIP	330	5%	1/10W	
R1513	1-216-041-00	METAL CHIP	470	5%	1/10W	
R1514	1-216-045-00	METAL CHIP	680	5%	1/10W	
R1515	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R1517	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R1518	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R1519	1-216-029-00	METAL CHIP	150	5%	1/10W	
R1520	1-216-033-00	METAL CHIP	220	5%	1/10W	
R1521	1-216-037-00	METAL CHIP	330	5%	1/10W	
R1522	1-216-041-00	METAL CHIP	470	5%	1/10W	
R1523	1-216-045-00	METAL CHIP	680	5%	1/10W	
R1524	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R1525	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R1526	1-216-029-00	METAL CHIP	150	5%	1/10W	
R1527	1-216-029-00	METAL CHIP	150	5%	1/10W	
R1530	1-216-029-00	METAL CHIP	150	5%	1/10W	
R1531	1-216-029-00	METAL CHIP	150	5%	1/10W	

< SWITCH >

Ref.No.	Part No.	Description	Remark
S1022	1-572-184-11	SWITCH, KEYBOARD (CONTINUE)	
S1501	1-572-184-11	SWITCH, KEYBOARD (⏏)	
S1502	1-572-184-11	SWITCH, KEYBOARD (▷‖)	
S1503	1-572-184-11	SWITCH, KEYBOARD (■)	
S1504	1-572-184-11	SWITCH, KEYBOARD (▶▶▷▷|)	
S1505	1-572-184-11	SWITCH, KEYBOARD (|◁◁◀◀)	
S1506	1-572-184-11	SWITCH, KEYBOARD (REPEAT)	
S1507	1-572-184-11	SWITCH, KEYBOARD (PROGRAM)	
S1508	1-572-184-11	SWITCH, KEYBOARD (SHUFFLE)	
S1509	1-572-184-11	SWITCH, KEYBOARD (EDIT/TIME FADE)	
S1510	1-572-184-11	SWITCH, KEYBOARD (CHECK)	
S1511	1-572-184-11	SWITCH, KEYBOARD (■)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

SWITCH TC

Ref. No.	Part No.	Description	Remark
S1512	1-572-184-11	SWITCH, KEYBOARD (PAUSE)	
S1513	1-572-184-11	SWITCH, KEYBOARD (▷)	
S1514	1-572-184-11	SWITCH, KEYBOARD (◁)	
S1516	1-572-184-11	SWITCH, KEYBOARD (◀◀)	
S1517	1-572-184-11	SWITCH, KEYBOARD (▶▶)	
S1518	1-572-184-11	SWITCH, KEYBOARD (■)	
S1519	1-572-184-11	SWITCH, KEYBOARD (▷)	
S1520	1-572-184-11	SWITCH, KEYBOARD (◁)	
S1521	1-572-184-11	SWITCH, KEYBOARD (◀◀)	
S1522	1-572-184-11	SWITCH, KEYBOARD (▶▶)	
S1523	1-572-184-11	SWITCH, KEYBOARD (REC)	
S1524	1-572-184-11	SWITCH, KEYBOARD (HIGH SPEED)	
S1525	1-572-184-11	SWITCH, KEYBOARD (CD SYNC)	
S1526	1-572-378-11	SWITCH, SLIDE (DIRECTION MODE)	
S1527	1-572-347-31	SWITCH, SLIDE (DOLBY NR)	

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Ref. No.	Part No.	Description
*	A-4356-383-A	TC BOARD, COMPLETE (AEP)
		******************
*	A-4356-963-A	TC BOARD, COMPLETE (G, IT)
		******************

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C201	1-163-986-00	CERAMIC CHIP	0.027uF	10%	25V
C202	1-163-133-00	CERAMIC CHIP	470PF	5%	50V (AEP)
C203	1-124-254-00	ELECT	0.68uF	20%	50V
C204	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C205	1-124-257-00	ELECT	2.2uF	20%	50V
C206	1-163-117-00	CERAMIC CHIP	100PF	5%	50V (AEP)
C206	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V (G, IT)
C207	1-126-157-11	ELECT	10uF	20%	16V
C208	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C209	1-124-257-00	ELECT	2.2uF	20%	50V
C301	1-163-986-00	CERAMIC CHIP	0.027uF	10%	25V
C302	1-163-133-00	CERAMIC CHIP	470PF	5%	50V (AEP)
C303	1-124-254-00	ELECT	0.68uF	20%	50V
C304	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C305	1-124-257-00	ELECT	2.2uF	20%	50V
C306	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C306	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V (G, IT)
C307	1-126-157-11	ELECT	10uF	20%	16V
C308	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C309	1-124-257-00	ELECT	2.2uF	20%	50V
C401	1-126-933-11	ELECT	100uF	20%	16V
C402	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C403	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C404	1-124-443-00	ELECT	100uF	20%	10V
C405	1-124-443-00	ELECT	100uF	20%	10V
C407	1-124-257-00	ELECT	2.2uF	20%	50V
C408	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C409	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C410	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C411	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C412	1-124-903-11	ELECT	1uF	20%	50V
C413	1-126-925-11	ELECT	470uF	20%	10V
C414	1-124-443-00	ELECT	100uF	20%	10V
C415	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C416	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C417	1-124-482-11	ELECT	33uF	20%	35V
C419	1-126-926-11	ELECT	1000uF	20%	10V
C420	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C421	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C422	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C424	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C425	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C426	1-124-478-11	ELECT	100uF	20%	25V
C427	1-124-478-11	ELECT	100uF	20%	25V
C428	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C429	1-126-926-11	ELECT	1000uF	20%	10V
C4001	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C4002	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C4003	1-164-005-11	CERAMIC CHIP	0.47uF		25V

< CONNECTOR >

Ref. No.	Part No.	Description
CN402	1-573-101-11	SOCKET, CONNECTOR 9P
CN403	1-580-783-11	CONNECTOR, BOARD TO BOARD
CN404	1-573-101-11	SOCKET, CONNECTOR 9P
CN405	1-580-783-11	CONNECTOR, BOARD TO BOARD
CN406	1-580-783-11	CONNECTOR, BOARD TO BOARD
* CN407	1-566-970-11	HOUSING, CONNECTOR(PC BOARD)8P
* CN408	1-566-970-11	HOUSING, CONNECTOR(PC BOARD)8P
CN410	1-695-068-21	CONNECTOR, FFC/FPC 15P

< DIODE >

Ref. No.	Part No.	Description	
D401	8-719-210-33	DIODE	EC10DS2
D403	8-719-400-18	DIODE	MA152WK
D404	8-719-400-46	DIODE	MA3056-L
D405	8-719-401-93	DIODE	MA3082H-TX
D407	8-719-400-18	DIODE	MA152WK
D410	8-719-400-18	DIODE	MA152WK
D411	8-719-400-20	DIODE	MA152WA
D414	8-719-210-33	DIODE	EC10DS2
D416	8-719-400-18	DIODE	MA152WK
D4001	8-719-400-18	DIODE	MA152WK

Ref. No.	Part No.	Description	Remark
		< IC >	
IC201	8-759-300-71	IC HD14053BFP	
IC202	8-752-050-13	IC CXA1101M	
IC203	8-759-996-43	IC RC4558PS	
IC204	8-759-516-47	IC CD4066BCM	
IC205	8-752-055-60	IC CXA1578M	
IC401	8-759-061-36	IC M50964-302	
IC402	8-759-207-05	IC TA7272P	
IC403	8-759-996-43	IC RC4558PS-T1	
IC404	8-759-925-85	IC SN74HC32ANS	
IC405	8-759-520-90	IC PST572E	
		< COIL >	
L403	1-410-482-31	INDUCTOR 100uH	
L404	1-410-482-31	INDUCTOR 100uH	
		< TRANSISTOR >	
Q201	8-729-900-80	TRANSISTOR DTC114ES	
Q202	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q301	8-729-900-80	TRANSISTOR DTC114ES	
Q302	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q401	8-729-804-41	TRANSISTOR 2SB1122-S	
Q402	8-729-804-41	TRANSISTOR 2SB1122-S	
Q403	8-729-900-61	TRANSISTOR DTA114ES	
Q404	8-729-900-80	TRANSISTOR DTC114ES	
Q405	8-729-900-61	TRANSISTOR DTA114ES	
Q406	8-729-900-61	TRANSISTOR DTA114ES	
Q407	8-729-900-61	TRANSISTOR DTA114ES	
Q408	8-729-900-80	TRANSISTOR DTC114ES	
Q409	8-729-900-65	TRANSISTOR DTA144ES	
Q410	8-729-900-65	TRANSISTOR DTA144ES	
Q411	8-729-900-80	TRANSISTOR DTC114ES	
Q412	8-729-900-61	TRANSISTOR DTA114ES	
Q414	8-729-900-80	TRANSISTOR DTC114ES	
Q415	8-729-900-61	TRANSISTOR DTA114ES	
		< RESISTOR >	
R201	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R202	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R203	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R204	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R205	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R206	1-216-025-00	METAL CHIP 100 5% 1/10W	
R207	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R208	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R209	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R210	1-216-066-00	METAL CHIP 5.1K 5% 1/10W	
R211	1-216-025-00	METAL CHIP 100 5% 1/10W	
R212	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R213	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R214	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R215	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R301	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R302	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R303	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R304	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R305	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R306	1-216-025-00	METAL CHIP 100 5% 1/10W	
R307	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R308	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R309	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R310	1-216-066-00	METAL CHIP 5.1K 5% 1/10W	
R311	1-216-025-00	METAL CHIP 100 5% 1/10W	
R312	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R313	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R314	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R315	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R401	1-216-037-00	METAL CHIP 330 5% 1/10W	
R402	1-216-037-00	METAL CHIP 330 5% 1/10W	
R403	1-216-037-00	METAL CHIP 330 5% 1/10W	
R404	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R405	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R406	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R407	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R408	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R409	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R410	1-216-045-00	METAL CHIP 680 5% 1/10W	
R411	1-216-037-00	METAL CHIP 330 5% 1/10W	
R412	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R413	1-216-045-00	METAL CHIP 680 5% 1/10W	
R414	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R415	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R416	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R417	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R418	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R419	1-216-084-00	METAL CHIP 30K 5% 1/10W	
R420	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R421	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R422	1-216-090-00	METAL CHIP 51K 5% 1/10W	
R423	1-216-080-00	METAL CHIP 20K 5% 1/10W	
R424	1-216-090-00	METAL CHIP 51K 5% 1/10W	
R425	1-216-025-00	METAL CHIP 100 5% 1/10W	
R426	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R427	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R428	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R429	1-216-090-00	METAL CHIP 51K 5% 1/10W	
R430	1-216-084-00	METAL CHIP 30K 5% 1/10W	
R431	1-216-080-00	METAL CHIP 20K 5% 1/10W	
R432	1-216-090-00	METAL CHIP 51K 5% 1/10W	
R433	1-216-025-00	METAL CHIP 100 5% 1/10W	

Ref. No.	Part No.	Description	Remark
R434	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R435	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R436	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R437	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R438	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R440	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R441	1-216-041-00	METAL CHIP 470 5% 1/10W	
R444	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R445	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R446	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R447	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R448	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R449	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R450	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R451	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R452	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R453	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R454	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R455	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R456	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R457	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R458	1-216-088-00	METAL CHIP 43K 5% 1/10W	
R459	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R460	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R461	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R462	1-216-082-00	METAL CHIP 24K 5% 1/10W	
R463	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R464	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R466	1-216-025-00	METAL CHIP 100 5% 1/10W	
R467	1-216-025-00	METAL CHIP 100 5% 1/10W	
R470	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R471	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R472	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R473	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R474	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R475	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R2001	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R4000	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R4001	1-216-298-00	METAL CHIP 2.2 5% 1/10W	
R4002	1-216-298-00	METAL CHIP 2.2 5% 1/10W	
R4003	1-216-298-00	METAL CHIP 2.2 5% 1/10W	
R4004	1-216-298-00	METAL CHIP 2.2 5% 1/10W	
R4005	1-216-298-00	METAL CHIP 2.2 5% 1/10W	
R4006	1-216-298-00	METAL CHIP 2.2 5% 1/10W	
R4007	1-216-298-00	METAL CHIP 2.2 5% 1/10W	
R4008	1-216-298-00	METAL CHIP 2.2 5% 1/10W	
⚠R4009	1-212-849-00	FUSIBLE 4.7 5% 1/4W	F
⚠R4010	1-212-849-00	FUSIBLE 4.7 5% 1/4W	F
⚠R4099	1-249-390-11	CARBON 5.6 5% 1/6W	F
R4421	1-216-049-00	METAL CHIP 1K 5% 1/10W	

Ref. No.	Part No.	Description	Remark
		< VARIABLE RESISTOR >	
RV201	1-241-136-11	RES, ADJ, CARBON 10K (REC LEVEL (L))	
RV301	1-241-136-11	RES, ADJ, CARBON 10K (REC LEVEL (R))	
		< TEST PIN >	
* TP101	1-564-520-11	PLUG, CONNECTOR 5P	
* TP401	1-564-517-11	PLUG, CONNECTOR 2P	
		< VIBRATOR >	
X401	1-567-819-11	VIBRATOR, CERAMIC (4MHz)	
		**	
*	1-645-618-12	VOL BOARD *********	
		< CAPACITOR >	
C418	1-126-916-11	ELECT 1000uF 20% 6.3V	
C419	1-126-157-11	ELECT 10uF 20% 16V	
C420	1-126-157-11	ELECT 10uF 20% 16V	
		< CONNECTOR >	
* CN401	1-568-852-11	SOCKET, CONNECTOR 9P	
* CN402	1-566-973-11	PIN, CONNECTOR (PC BOARD) 8P	
* CN403	1-568-847-11	SOCKET, CONNECTOR 4P	
* CN404	1-695-070-11	CONNECTOR, FFC/FPC 11P	
* CN451	1-564-521-11	PLUG, CONNECTOR 6P	
* CN452	1-566-973-11	PIN, CONNECTOR (PC BOARD) 8P	
		< IC >	
IC406	8-759-820-62	IC LB1639	
		< RESISTOR >	
R407	1-247-887-00	CARBON 220K 5% 1/4W	
R457	1-247-887-00	CARBON 220K 5% 1/4W	
R486	1-249-413-11	CARBON 470 5% 1/4W	
		< VARIABLE RESISTOR >	
RV406	1-241-998-11	RES, VAR, CARBON 100K/100K (VOLUME)	
		**	
		MISCELLANEOUS *************	
5	1-690-997-11	WIRE (FLAT TYPE) (11 CORE)	
55	1-690-854-21	WIRE (FLAT TYPE) (16 CORE)	
61	1-690-996-11	WIRE (FLAT TYPE) (4 CORE)	
* 62	1-590-240-11	WIRE, FLAT TYPE (9 CORE)	
64	1-690-588-31	WIRE, FLAT TYPE (9 CORE)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
⚠68	1-590-042-11	CORD, POWER (WITH CORE) (G, IT)	
⚠68	1-696-169-11	CORD, POWER (AEP)	
253	1-590-530-11	WIRE, FLAT TYPE	
264	1-690-853-11	WIRE (FLAT TYPE) (19 CORE)	
⚠305	8-848-144-11	DEVICE, OPTICAL KSS-240A	
307	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
⚠F801	1-532-203-00	FUSE (T2A, 250V)	
HP101	A-2003-837-F	BASE ASSY, HEAD (DECK A)	
HRPE101	A-2003-838-A	BASE ASSY, HEAD (DECK B)	
M101	X-4917-504-1	MOTOR ASSY (SLED)	
M101A	X-3363-501-1	MOTOR ASSY (REEL) (DECK A)	
M101B	X-3363-501-1	MOTOR ASSY (REEL) (DECK B)	
M102A	X-3359-417-1	MOTOR ASSY (CAPSTAN) (DECK A)	
M102B	X-3359-417-1	MOTOR ASSY (CAPSTAN) (DECK B)	
M251	A-4608-362-A	MOTOR (L) ASSY (LOADING)	
⚠T101	1-423-424-11	TRANSFORMER, POWER	

* * *

ACCESSORIES & PACKING MATERIALS

Ref. No.	Part No.	Description	Remark
	1-693-057-11	COMMANDER, STANDARD (RM-S150)	
*	4-941-548-01	LABEL, CLASS 1	
*	4-954-955-01	CUSHION, LOWER	
*	4-954-956-01	CUSHION, UPPER	

* * *

HARDWARE LIST

Ref. No.	Part No.	Description	Remark
#1	7-682-547-04	SCREW +BVTT 3X6 (S)	
#2	7-685-649-79	SCREW +BVTP 3X14 TYPE2 IT-3	
#3	7-685-648-79	SCREW +BVTP 3X12 TYPE2 N-S	
#4	7-682-549-04	SCREW +BVTT 3X10 (S)	
#5	7-621-255-15	SCREW +PTT 2X3 (S)	
#6	7-621-770-67	SCREW +PTT 2.6X6 (S)	
#7	7-627-556-08	SCREW +P 2.6X2.8	
#8	7-621-775-00	SCREW +B 2.6X3	
#9	7-685-234-19	SCREW +KTP 2.6X8 TYPE2NON-SLIT	
#10	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#11	7-624-105-04	STOP RING 2.3, TYPE -E	
#12	7-621-775-10	SCREW +B 2.6X4	
#13	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

SS-H900

SERVICE MANUAL

6492

AEP Model

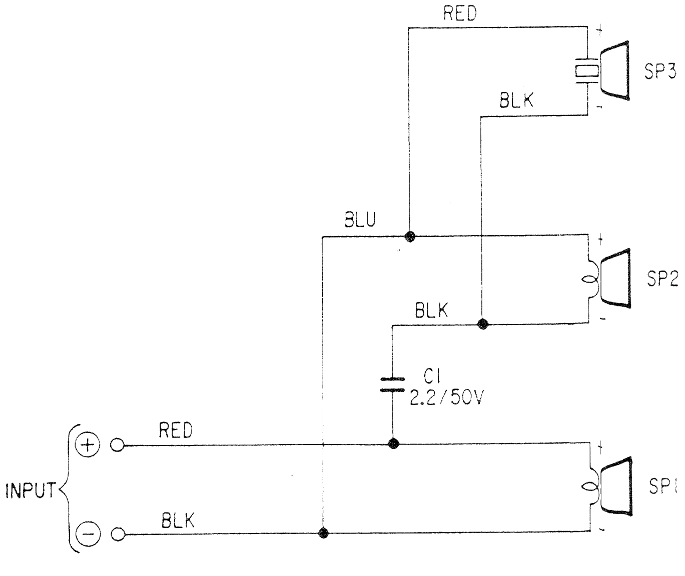
- SS-H900 is the speaker system in MHC-900.

SPECIFICATIONS

Speaker system	3-way
Speaker units	Woofer: 16 cm dia., cone type Tweeter: 6 cm dia., cone type Super tweeter: 2 cm dia., dome type
Enclosure type	Bass reflex
Frequency range	55Hz to 20,000Hz
Sensitivity	89 dB/W/m
Rated impedance	6 ohms
Dimensions	Approx. 245x285x230mm
Weight	Approx. 4.4 kg net per speaker

Design and specifications subject to change without notice.

1. WIRING DIAGRAM



SPEAKER SYSTEM

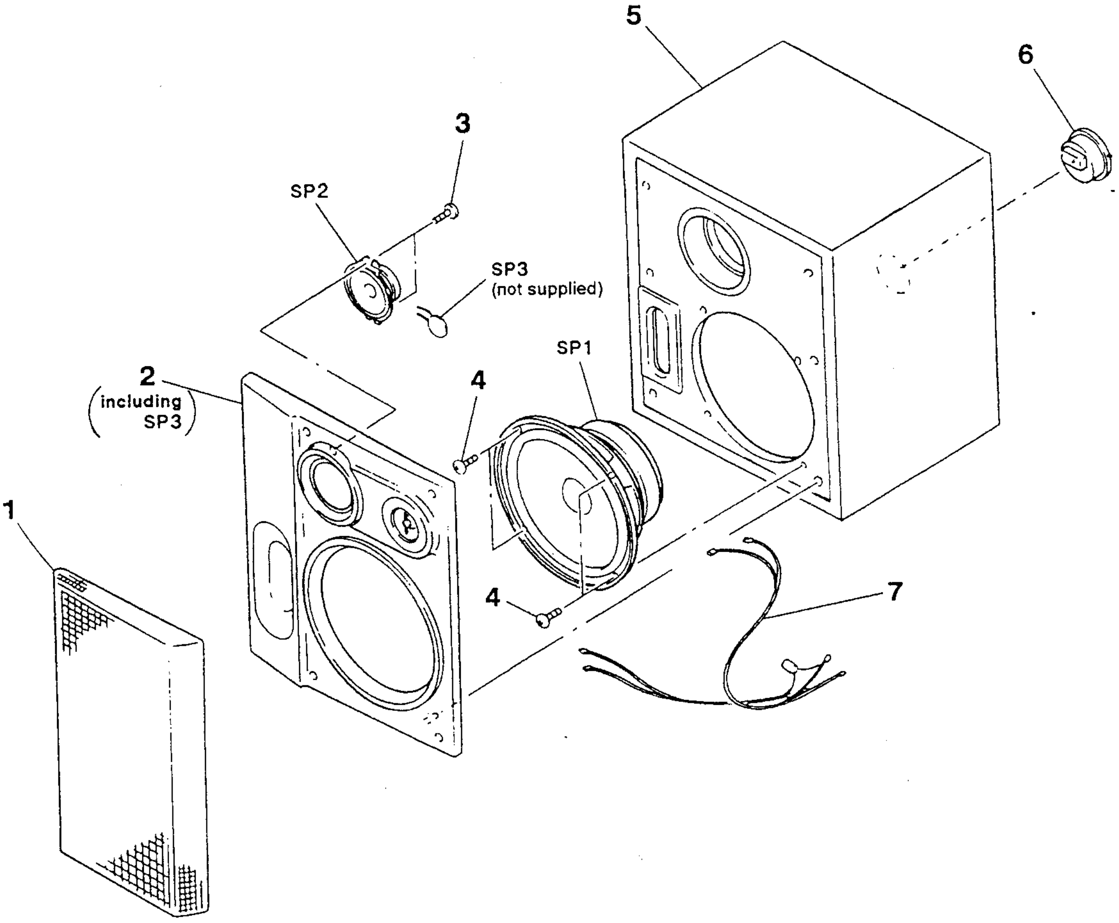
SONY®

6492

2. EXPLODED VIEW AND PARTS LIST

NOTE:

- -XX,-X mean standardized parts, so they may have some difference from the original one.
- Color indication of Appearance Parts.
  Example:
  KNOB,BALANCE (WHITE) . . . (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.



Ref. No.	Part No.	Description	Remark
1	X-4942-350-1	FRAME (R) ASSY, GRILLE	
1	X-4942-713-1	FRAME (L) ASSY, GRILLE	
2	X-4943-277-1	PANEL (R) ASSY, FRONT	
2	X-4943-276-1	PANEL (L) ASSY, FRONT	
3	7-685-659-79	SCREW +BVTP 4X8 TYPE2 SLIT	
4	4-874-614-11	SCREW +BVTP 3.5X14	

Ref. No.	Part No.	Description	Remark
* 5	X-4942-714-1	CABINET (R) ASSY, SPEAKER (AEP)	
* 5	X-4942-715-1	CABINET (L) ASSY, SPEAKER (AEP)	
* 5	X-4943-156-1	CABINET (R) ASSY, SPEAKER (Germany)	
* 5	X-4943-158-1	CABINET (L) ASSY, SPEAKER (Germany)	
6	1-537-332-11	TERMINAL BOARD	
7	1-696-553-12	CORD, CONNECTION	
SP1	1-544-769-11	SPEAKER (16CM)	
SP2	1-544-770-11	SPEAKER (6CM)	

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HCD-H900

SONY®

SERVICE MANUAL

AEP Model

SUPPLEMENT-1

File this Supplement with the Service Manual.

Subject : IC PIN FUNCTION
(μPD78012GC)
BLOCK DIAGRAMS
IC Block Diagram
CORRECTION

IC1001 System Controller IC (μPD78012GC-514-AB8 : Display Board)

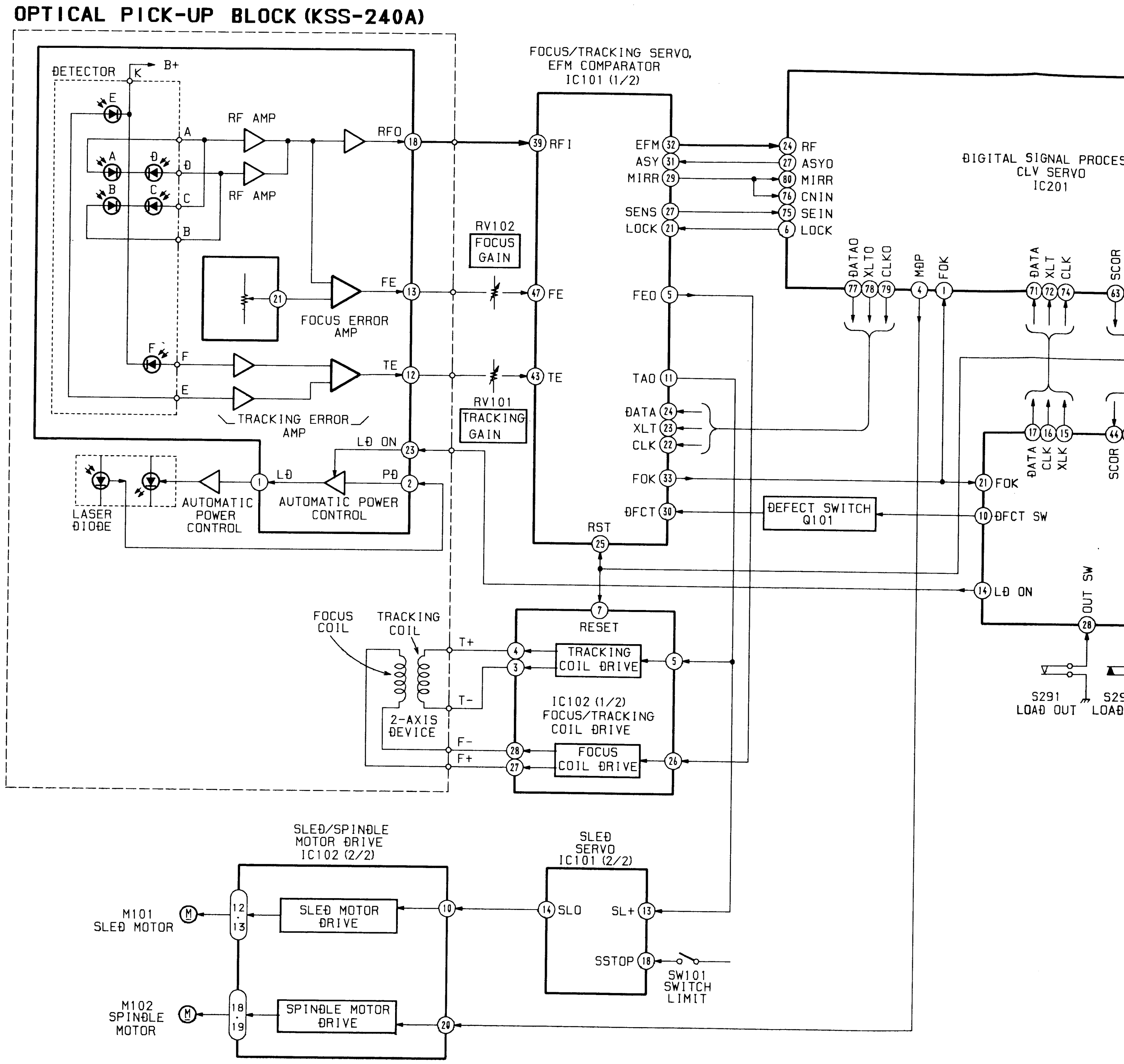
<table>
<tr><th>Pin No.</th><th>Signal Name</th><th>I/O</th><th>Function</th></tr>
<tr><td>1</td><td>CD D0</td><td>I</td><td>Display data 0 from CD controller (μPD75116GF)</td></tr>
<tr><td>2</td><td>CD D1</td><td>I</td><td>Display data 1 from CD controller (μPD75116GF)</td></tr>
<tr><td>3</td><td>CD D2</td><td>I</td><td>Display data 2 from CD controller (μPD75116GF)</td></tr>
<tr><td>4</td><td>CD D3</td><td>I</td><td>Display data 3 from CD controller (μPD75116GF)</td></tr>
<tr><td>5</td><td>CD KEYREQ</td><td>O</td><td>Timer start request signal to CD controller (μPD75116GF)</td></tr>
<tr><td>6</td><td>AU.B.IN</td><td>I</td><td>Audio bus input</td></tr>
<tr><td>7</td><td>AU.B.OUT</td><td>O</td><td>Audio bus output</td></tr>
<tr><td>8</td><td>SIRCS</td><td>I</td><td>Infrared remote commander</td></tr>
<tr><td>9</td><td>GND</td><td>–</td><td>GND</td></tr>
<tr><td>10</td><td>$\overline{\text{POWER}}$</td><td>O</td><td>Power supply ON/OFF control. “L”: ON.</td></tr>
<tr><td>11</td><td>$\overline{\text{F.MUTE}}$</td><td>O</td><td>Muting control. “L”: Muting.</td></tr>
<tr><td>12</td><td>VOL (+)</td><td>O</td><td>Sound volume motor control. “L”: up.</td></tr>
<tr><td>13</td><td>VOL (–)</td><td>O</td><td>Sound volume motor control. “L”: down.</td></tr>
<tr><td>14</td><td>CDOFF</td><td>O</td><td>CD power supply ON/OFF control. “L”: CD OFF.</td></tr>
<tr><td>15</td><td>$\overline{\text{SURROUND}}$</td><td>O</td><td>Surround ON/OFF control. “L”: ON.</td></tr>
<tr><td>16</td><td>$\overline{\text{DBFB}}$</td><td>O</td><td>DBFB ON/OFF control. “L”: ON.</td></tr>
<tr><td>17</td><td>$\overline{\text{MPX}}$</td><td>–</td><td>Not used.</td></tr>
<tr><td>18</td><td>$\overline{\text{PON}}$</td><td>–</td><td>Not used.</td></tr>
<tr><td>19</td><td>STEREO</td><td>I</td><td>FM stereo/monaural discriminating signal from FM/AM IF amplifier (LA1851N). “L”: stereo.</td></tr>
<tr><td>20</td><td>SIGNAL</td><td>I</td><td>Tuning discriminating signal from FM/AM IF amplifier (LA1851N). “L”: tuning.</td></tr>
<tr><td>21</td><td>DATA.IN</td><td>I</td><td>Serial data from tuner PLL IC (LC7218)</td></tr>
<tr><td>22</td><td>DATA.OUT</td><td>O</td><td>Serial data to tuner PLL IC (LC7218)</td></tr>
<tr><td>23</td><td>CLK</td><td>O</td><td>Serial clock to tuner PLL IC (LC7218)</td></tr>
<tr><td>24</td><td>GND</td><td>–</td><td>GND</td></tr>
<tr><td>25</td><td>CE</td><td>O</td><td>Chip select to tuner PLL IC (LC7218)</td></tr>
<tr><td>26</td><td>LC7522 DATA</td><td>O</td><td>Serial data to EQ controller (LC7522)</td></tr>
<tr><td>27</td><td>LC7522 CLK</td><td>O</td><td>Serial clock to EQ controller (LC7522)</td></tr>
<tr><td>28</td><td>FUNK B</td><td>O</td><td rowspan="2">Control signal to input selector (MC14052)
<table>
<tr><td>FUNK A</td><td>H</td><td>L</td><td>H</td><td>L</td></tr>
<tr><td>FUNK B</td><td>H</td><td>H</td><td>L</td><td>L</td></tr>
<tr><td>INPUT</td><td>TAPE</td><td>CD</td><td>TUNER</td><td>VIDEO/AUX</td></tr>
</table></td></tr>
<tr><td>29</td><td>FUNK A</td><td>O</td></tr>
<tr><td>30</td><td>GEQ PRESET.LED5</td><td>O</td><td>LED drive for indicating GEQ disco mode. “L”: light-up.</td></tr>
<tr><td>31</td><td>GEQ PRESET.LED4</td><td>O</td><td>LED drive for indicating GEQ pops mode. “L”: light-up.</td></tr>
<tr><td>32</td><td>GEQ PRESET.LED3</td><td>O</td><td>LED drive for indicating GEQ classic mode. “L”: light-up.</td></tr>
<tr><td>33</td><td>GEQ PRESET.LED2</td><td>O</td><td>LED drive for indicating GEQ jazz mode. “L”: light-up.</td></tr>
<tr><td>34</td><td>GEQ PRESET.LED1</td><td>O</td><td>LED drive for indicating GEQ BGM mode. “L”: light-up.</td></tr>
<tr><td>35</td><td>$\overline{\text{RST}}$</td><td>I</td><td>Reset input. “L”: reset.</td></tr>
<tr><td>36</td><td>B.U</td><td>I</td><td>Normal/back-up mode switching signal. “L”: back-up mode.</td></tr>
<tr><td>37</td><td>DP.CLK</td><td>I</td><td>Display data transmitting clock from CD controller (μPD75116GF)</td></tr>
<tr><td>38</td><td>CLK</td><td>O</td><td>Data transmitting clock to ROM (X24C01P)</td></tr>
<tr><td>39</td><td>DATA</td><td>I</td><td>Data from ROM (X24C01P)</td></tr>
<tr><td>40</td><td>VDD</td><td></td><td>+5V</td></tr>
<tr><td>41</td><td>X2</td><td></td><td rowspan="2">Connected to crystal oscillator for main system clock (8.38MHz).</td></tr>
<tr><td>42</td><td>X1</td><td></td></tr>
</table>

Pin No.	Signal Name	I/O	Function
43	GND	–	GND
44	XT2	–	Connected to crystal oscillator for sub system clock (32.768KHz).
45	XT1	–	
46	AVSS(GND)	–	GND
47	KEY INPUT 4	I	Key input.
48	KEY INPUT 3	I	
49	KEY INPUT 2	I	
50	KEY INPUT 1	I	
51	SPEANA.IN 2	I	Spectrum analyzer (1K, 2.5K, 6.3K, 16KHz)
52	SPEANA.IN 1	I	Spectrum analyzer (53Hz, 160Hz, 400Hz)
53	NC	–	+5V
54		I	Destination switching. 0.6V: AEP, GERMAN model, 1.2V: ITALIAN model.
55	AVDD	–	+5V
56	AV	–	+5V
57	COLD.RST	–	Not used.
58	DATA	O	Serial data to FL driver (SN755703)
59	CLK	O	Serial clock to FL driver (SN755703)
60	LATCH	O	Serial data latch signal to FL driver (SN755703)
61	$\overline{\text{CL}}$	O	Reset signal to FL driver (SN755703). "L": reset.
62	INH	O	Spectrum analyzer input prohibiting. "H": Prohibiting.
63	M44052B	O	Spectrum analyzer input selecting.
64	M44O52A	O	

VOLTAGE (V)	0.0	0.6	1.3	2.0	2.6	3.2	3.8	4.4	5.0
KEY INPUT 4	POWER	CLOCK SET TIMER							NO INPUT
KEY INPUT 3	PRESET/ TIMER+	PRESET/ TIMER BAND	PRESET/ TIMER-	FUNCTION	S-SR	PRESET	EQ	CLOCK SET TIMER REC	NO INPUT
KEY INPUT 2	MEMORY/ NEXT	STEREO/ MONO	TUNING +	TUNING -	DBFB	CONTINUE	EDIT	CHECK	NO INPUT
KEY INPUT 1	⏏	▷❚❚	■	▶▶▷▷❙	❙◁◁◀◀	REPLAY	PROGRAM	SHUFFLE	NO INPUT

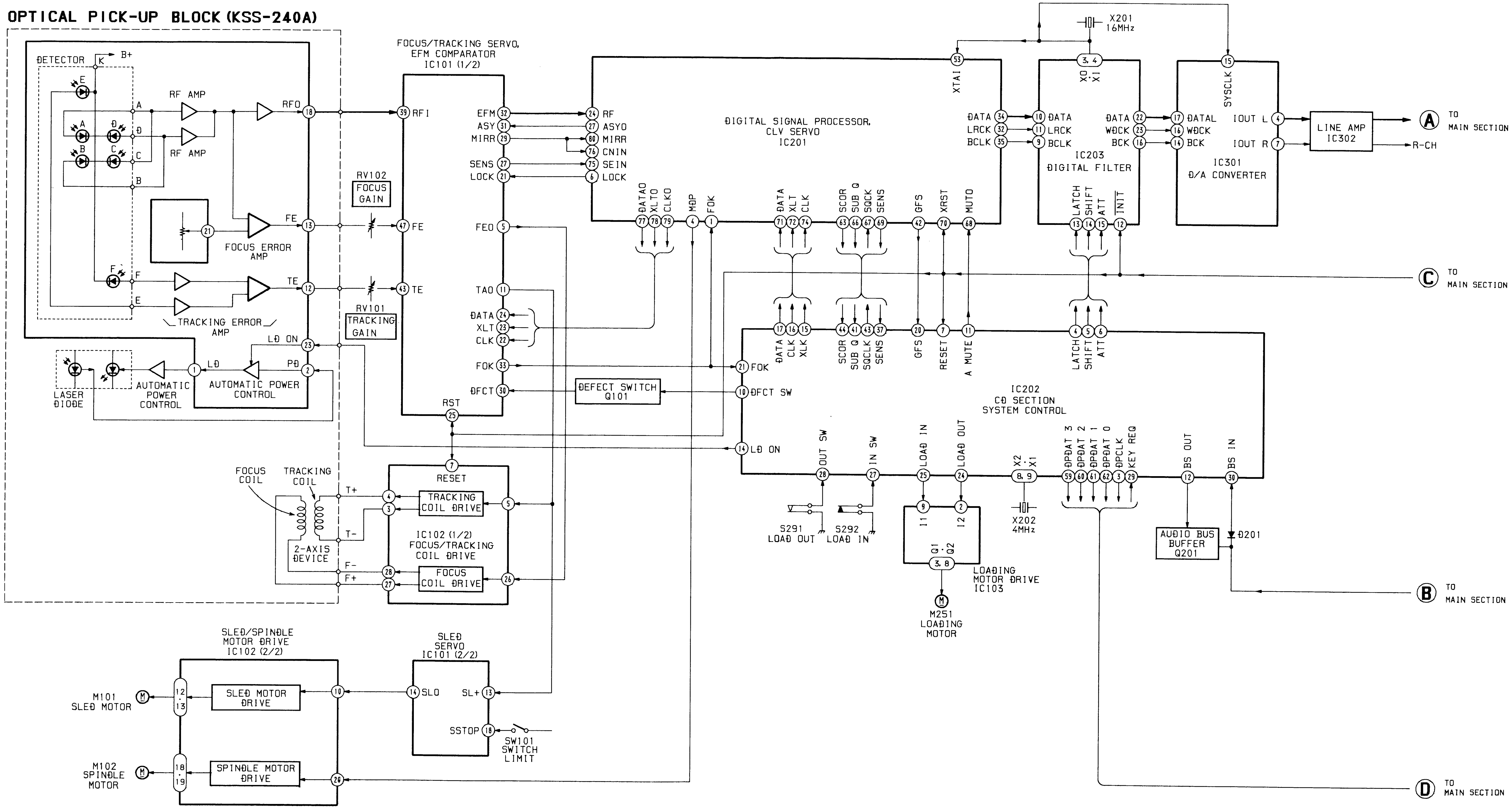
M44052 A	L	H	L	H
M44052 B	L	L	H	H
PIN (51) INPUT	16k	6.3k	2.5k	1k
PIN (52) INPUT	400	160	53	

BLOCK DIAGRAM 1 (CD SECTION)


OPTICAL PICK-UP BLOCK (KSS-240A)
DETECTOR
B+
K
E
A
D
B
C
F
RF AMP
RF AMP
RFO
FE
FOCUS ERROR AMP
TE
TRACKING ERROR AMP
LD ON
LD
PD
LASER DIODE
AUTOMATIC POWER CONTROL
AUTOMATIC POWER CONTROL
FOCUS/TRACKING SERVO, EFM COMPARATOR IC101 (1/2)
RFI
FE
TE
EFM
ASY
MIRR
SENS
LOCK
FEO
TAO
DATA
XLT
CLK
FOK
DFCT
RST
RV102 FOCUS GAIN
RV101 TRACKING GAIN
DIGITAL SIGNAL PROCES
CLV SERVO
IC201
RF
ASYO
MIRR
CNIN
SEIN
LOCK
DATAO
XLTO
CLKO
MDP
FOK
DATA
XLT
CLK
SCOR
DATA
CLK
XLK
SCOR
FOK
DFCT SW
LD ON
OUT SW
DEFECT SWITCH Q101
S291 LOAD OUT
S29
LOAD
FOCUS COIL
TRACKING COIL
2-AXIS DEVICE
T+
T-
F-
F+
RESET
TRACKING COIL DRIVE
IC102 (1/2) FOCUS/TRACKING COIL DRIVE
FOCUS COIL DRIVE
SLED/SPINDLE MOTOR DRIVE IC102 (2/2)
SLED MOTOR DRIVE
SPINDLE MOTOR DRIVE
M101 SLED MOTOR
M102 SPINDLE MOTOR
SLED SERVO IC101 (2/2)
SLO
SL+
SSTOP
SW101 SWITCH LIMIT

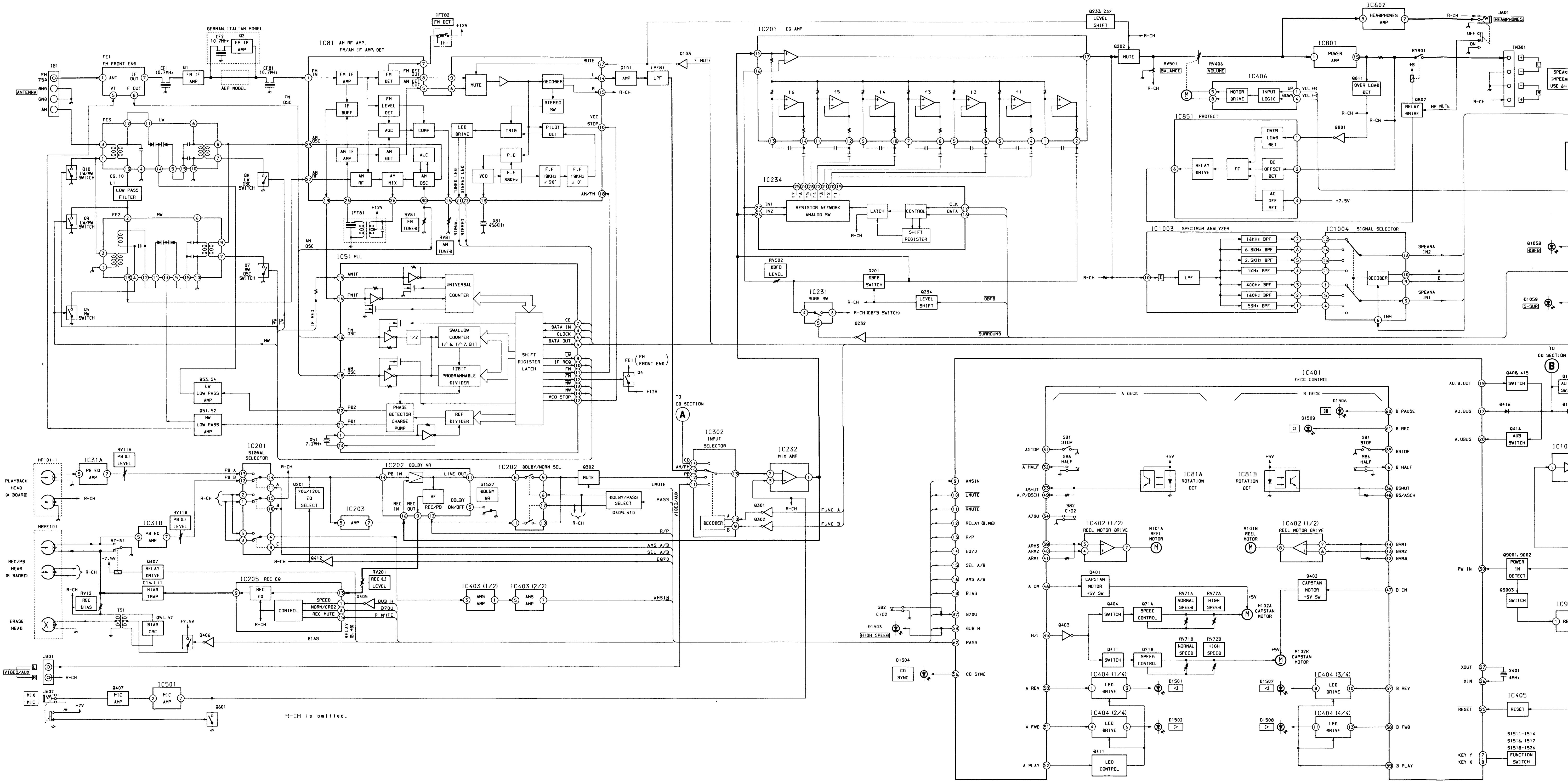
5.0
NO INPUT
NO INPUT
NO INPUT
NO INPUT

BLOCK DIAGRAM 1 (CD SECTION)

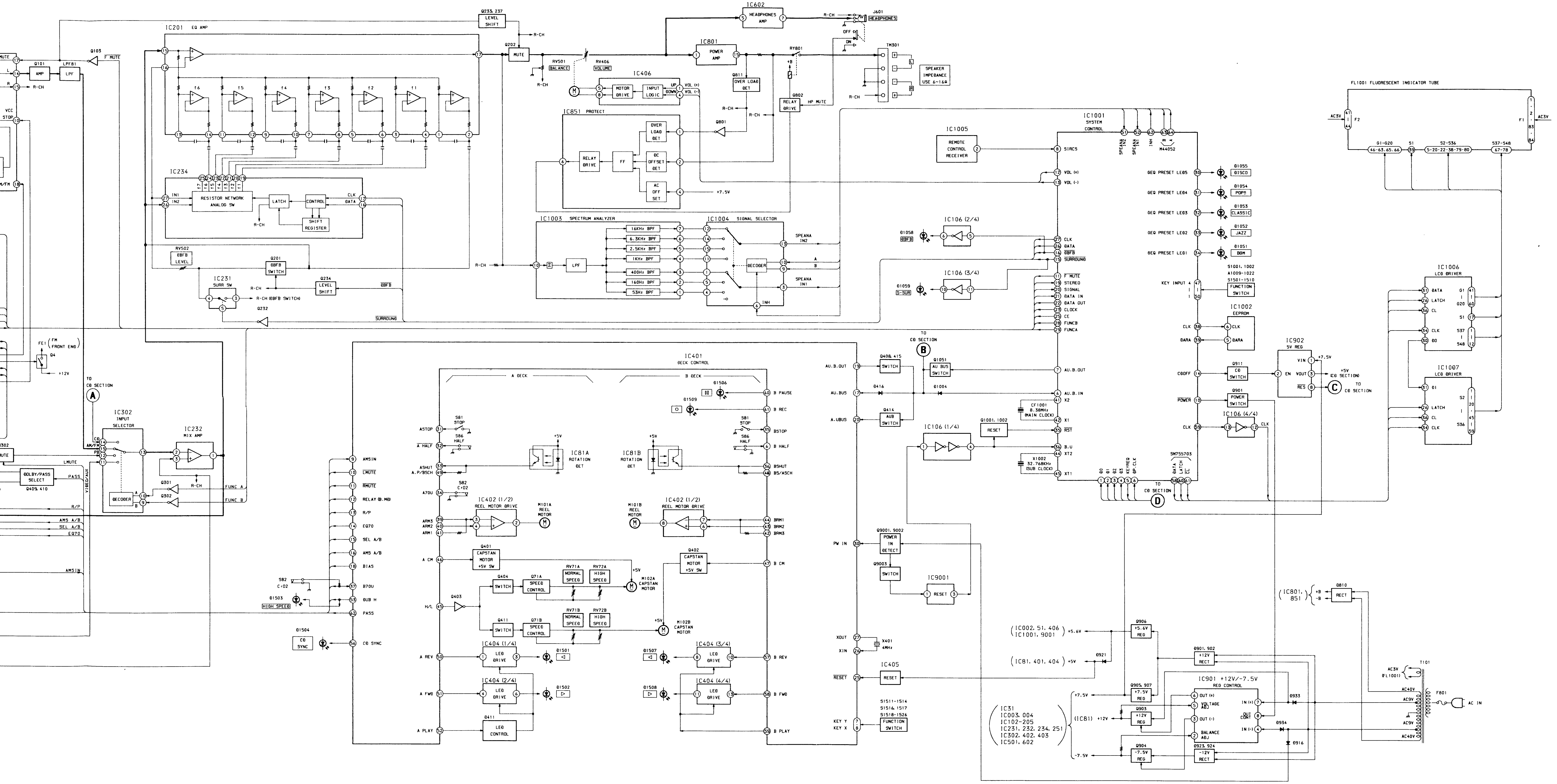

OPTICAL PICK-UP BLOCK (KSS-240A)
DETECTOR
K
B+
E
A
D
B
C
F
RF AMP
RF AMP
RFO
FE
FOCUS ERROR AMP
TE
TRACKING ERROR AMP
LD ON
LD
PD
AUTOMATIC POWER CONTROL
AUTOMATIC POWER CONTROL
LASER DIODE
RV102 FOCUS GAIN
RV101 TRACKING GAIN
FOCUS/TRACKING SERVO, EFM COMPARATOR IC101 (1/2)
RFI
FE
TE
EFM
ASY
MIRR
SENS
LOCK
FEO
TAO
DATA
XLT
CLK
FOK
DFCT
RST
DEFECT SWITCH Q101
FOCUS COIL
TRACKING COIL
T+
T-
F-
F+
2-AXIS DEVICE
RESET
TRACKING COIL DRIVE
IC102 (1/2) FOCUS/TRACKING COIL DRIVE
FOCUS COIL DRIVE
DIGITAL SIGNAL PROCESSOR, CLV SERVO IC201
RF
ASYO
MIRR
CNIN
SEIN
LOCK
XTAI
DATA
LRCK
BCLK
DATAO
XLTO
CLKO
MDP
FOK
DATA
XLT
CLK
SCOR
SUB Q
SQCK
SENS
GFS
XRST
MUTO
X201 16MHz
XO
XI
DATA
LRCK
BCLK
IC203 DIGITAL FILTER
DATA
WDCK
BCK
LATCH
SHIFT
ATT
INIT
SYSCLK
DATAL
WDCK
BCK
IOUT L
IOUT R
IC301 D/A CONVERTER
LINE AMP IC302
R-CH
A TO MAIN SECTION
C TO MAIN SECTION
B TO MAIN SECTION
D TO MAIN SECTION
DATA
CLK
XLK
SCOR
SUB Q
SQCLK
SENS
GFS
RESET
A MUTE
LATCH
SHIFT
ATT
FOK
DFCT SW
LD ON
IC202 CD SECTION SYSTEM CONTROL
OUT SW
IN SW
LOAD IN
LOAD OUT
X2
X1
DPDAT 3
DPDAT 2
DPDAT 1
DPDAT 0
DPCLK
KEY REQ
BS OUT
BS IN
S291 LOAD OUT
S292 LOAD IN
I1
I2
Q1
Q2
LOADING MOTOR DRIVE IC103
M251 LOADING MOTOR
X202 4MHz
AUDIO BUS BUFFER Q201
D201
SLED/SPINDLE MOTOR DRIVE IC102 (2/2)
SLED MOTOR DRIVE
SPINDLE MOTOR DRIVE
M101 SLED MOTOR
M102 SPINDLE MOTOR
SLED SERVO IC101 (2/2)
SLO
SL+
SSTOP
SW101 SWITCH LIMIT

09

BLOCK DIAGRAM 2 (MAIN SECTION)

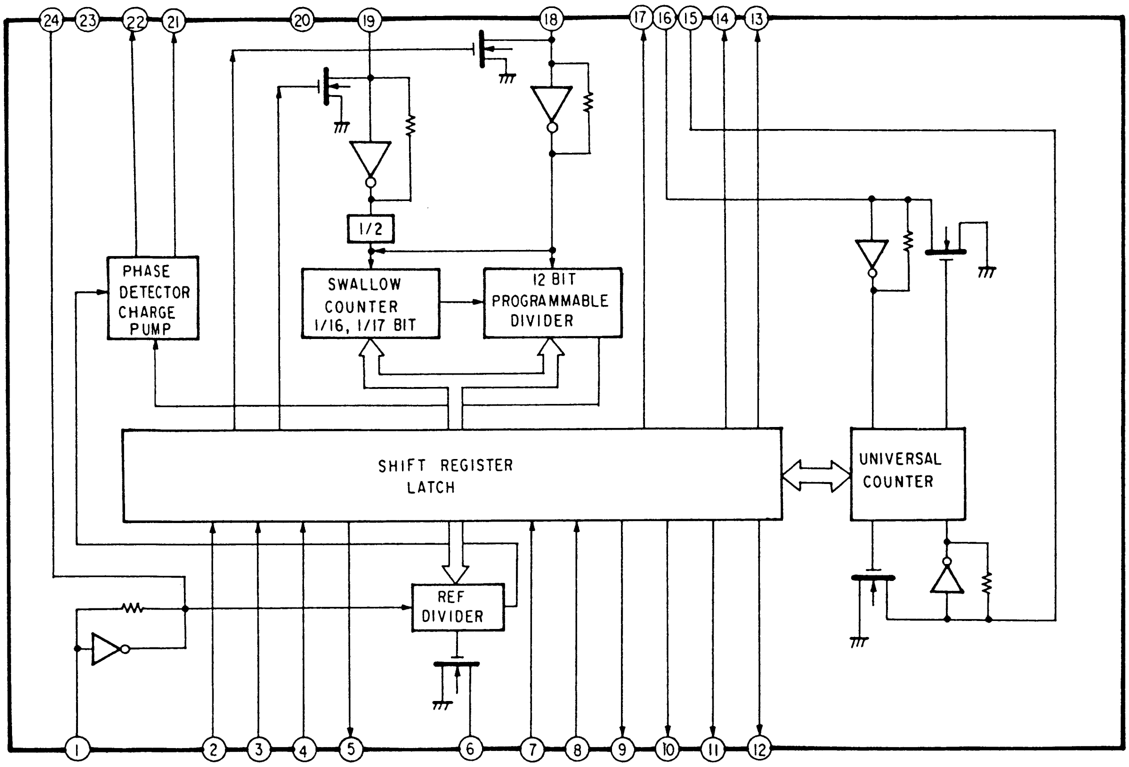

TB1
FM 75Ω
ANTENNA
GND
AM
FE1 FM FRONT END
ANT
IF OUT
VT
F OUT
CF1 10.7MHz
Q1 FM IF AMP
GERMAN, ITALIAN MODEL
CF2 10.7MHz
Q2 FM IF AMP
AEP MODEL
CF81 10.7MHz
IC81 AM RF AMP, FM/AM IF AMP, DET
FM IF AMP
FM DET
FM LEVEL DET
IF BUFF
AGC
COMP
AM IF AMP
AM DET
ALC
AM RF
AM MIX
AM OSC
IFT82 FM DET
+12V
IFT81
RV81 FM TUNED
RV81 AM TUNED
MUTE
DECODER
STEREO SW
LED DRIVE
TRIG
PILOT DET
P.D
VCO
F.F 38KHz
F.F 19KHz ∠90°
F.F 19KHz ∠0°
X81 456KHz
VCC STOP
AM/FM
Q101 AMP
LPF81 LPF
Q103
F MUTE
FE3 LW
FE2 MW
C9.10 L1
LOW PASS FILTER
Q10 LW/MW SWITCH
Q9 LW/MW SWITCH
Q5 MW SWITCH
Q8 LW OSC SWITCH
Q7 MW OSC SWITCH
IC51 PLL
AMIF
FMIF
UNIVERSAL COUNTER
FM OSC
1/2
SWALLOW COUNTER 1/16, 1/17, BIT
AM OSC
12BIT PROGRAMMABLE DIVIDER
SHIFT REGISTER LATCH
CE
DATA IN
CLOCK
DATA OUT
IF REQ
LW
FM
MW
VCO STOP
PHASE DETECTOR CHARGE PUMP
REF DIVIDER
PD2
PD1
X51 7.2MHz
FE1 (FM FRONT END)
Q4
Q53, 54 LW LOW PASS AMP
Q51, 52 MW LOW PASS AMP
TO CD SECTION
A
IC201 EQ AMP
f6 f5 f4 f3 f2 f1
IC234
RESISTOR NETWORK ANALOG SW
LATCH
CONTROL
SHIFT REGISTER
CLK
DATA
IN1
IN2
RV502 DBFB LEVEL
Q201 DBFB SWITCH
IC231 SURR SW
Q234 LEVEL SHIFT
DBFB
R-CH (DBFB SWITCH)
Q232
SURROUND
Q233, 237 LEVEL SHIFT
Q202 MUTE
RV501 BALANCE
RV406 VOLUME
IC406
MOTOR DRIVE
INPUT LOGIC
UP
DOWN
VOL (+)
VOL (-)
IC602 HEADPHONES AMP
J601 HEADPHONES
IC801 POWER AMP
Q811 OVER LOAD DET
RY801
Q802 RELAY DRIVE
HP MUTE
TM301
SPEAKER IMPEDANCE USE 6~
IC851 PROTECT
Q801
RELAY DRIVE
FF
OVER LOAD DET
DC OFFSET DET
AC OFF SET
+7.5V
IC1003 SPECTRUM ANALYZER
LPF
16KHz BPF
6.3KHz BPF
2.5KHz BPF
1KHz BPF
400Hz BPF
160Hz BPF
63Hz BPF
IC1004 SIGNAL SELECTOR
DECODER
INH
SPEANA IN2
SPEANA IN1
D1058 DBFB
D1059 S-SUR
TO CD SECTION
B
HP101-1
PLAYBACK HEAD (A BOARD)
IC31A PB EQ AMP
RV11A PB (L) LEVEL
HRPE101
REC/PB HEAD (B BOARD)
IC31B PB EQ AMP
RV11B PB (L) LEVEL
RY-31
Q407 RELAY DRIVE
C14, L11 BIAS TRAP
RV12 REC BIAS
ERASE HEAD
T51
Q51, 52 BIAS OSC
Q406
IC201 SIGNAL SELECTOR
PB A
PB B
Q201 70U/120U EQ SELECT
IC203 AMP
Q412
IC202 DOLBY NR
PB IN
LINE OUT
REC IN
REC OUT
VF
REC/PB
DOLBY ON/OFF
S1527 DOLBY NR
IC202 DOLBY/NORM SEL
Q302 MUTE
DOLBY/PASS SELECT Q409, 410
LMUTE
PASS
R/P
AMS A/B
SEL A/B
EQ70
IC205 REC EQ
REC EQ
CONTROL
SPEED
NORM/CRO2
REC MUTE
RV201 REC (L) LEVEL
Q405
DUB H
B70U
R MUTE
BIAS
RELAY (B.MD)
IC403 (1/2) AMS AMP
IC403 (2/2) AMS AMP
AMSIN
IC302 INPUT SELECTOR
CD
AM/FM
PB
VIDEO/AUX
DECODER
IC232 MIX AMP
Q301
Q302
FUNC A
FUNC B
J301 VIDEO/AUX
J602 MIX MIC
Q407 MIC AMP
IC501 MIC AMP
Q601
+7V
IC401 DECK CONTROL
A DECK
B DECK
AMSIN
LMUTE
RMUTE
RELAY (B.MD)
R/P
EQ70
SEL A/B
AMS A/B
BIAS
B70U
DUB H
PASS
CD SYNC
S82 C•O2
D1503 HIGH SPEED
D1504 CD SYNC
ASTOP
A HALF
ASHUT A.P/BSCH
A70U
ARM3 ARM2 ARM1
A CM
H/A
A REV
A FWD
A PLAY
S81 STOP
S86 HALF
S82 C•O2
IC81A ROTATION DET
IC81B ROTATION DET
IC402 (1/2) REEL MOTOR DRIVE
M101A REEL MOTOR
M101B REEL MOTOR
Q401 CAPSTAN MOTOR +5V SW
Q402 CAPSTAN MOTOR +5V SW
Q403
Q404 SWITCH
Q71A SPEED CONTROL
RV71A NORMAL SPEED
RV72A HIGH SPEED
M102A CAPSTAN MOTOR
Q411 SWITCH
Q71B SPEED CONTROL
RV71B NORMAL SPEED
RV72B HIGH SPEED
M102B CAPSTAN MOTOR
IC404 (1/4) LED DRIVE
IC404 (2/4) LED DRIVE
IC404 (3/4) LED DRIVE
IC404 (4/4) LED DRIVE
D1501 D1502 D1507 D1508
Q411 LED CONTROL
D1506 D1509
B PAUSE
B REC
BSTOP
B HALF
BSHUT
BS/ASCH
BRM1 BRM2 BRM3
B CM
B REV
B FWD
B PLAY
AU.B.OUT
AU.BUS
A.UBUS
Q408, 415 SWITCH
Q416
Q414 AUB SWITCH
PW IN
Q9001, 9002 POWER IN DETECT
Q9003 SWITCH
XOUT
XIN
X401 4MHz
RESET
IC405 RESET
KEY Y
KEY X
S1511-1514 S1516, 1517 S1518-1526 FUNCTION SWITCH
R-CH

R-CH is omitted.

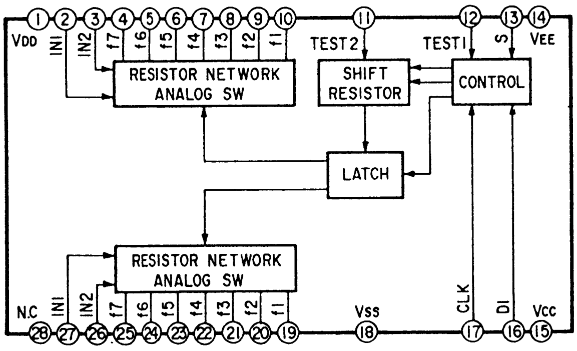

IC201 EQ AMP
IC234
RESISTOR NETWORK ANALOG SW
LATCH
CONTROL
SHIFT REGISTER
RV502 DBFB LEVEL
Q201 DBFB SWITCH
IC231 SURR SW
Q234 LEVEL SHIFT
Q232
SURROUND
Q233, 237 LEVEL SHIFT
Q202 MUTE
RV501 BALANCE
RV406 VOLUME
IC406
MOTOR DRIVE
INPUT LOGIC
IC602 HEADPHONES AMP
J601 HEADPHONES
IC801 POWER AMP
Q811 OVER LOAD DET
RY801
Q802 RELAY DRIVE
HP MUTE
TM301
SPEAKER IMPEDANCE USE 6-16Ω
IC851 PROTECT
RELAY DRIVE
FF
OVER LOAD DET
DC OFFSET DET
AC OFF SET
Q801
IC1003 SPECTRUM ANALYZER
LPF
16KHz BPF
6.3KHz BPF
2.5KHz BPF
1KHz BPF
400Hz BPF
160Hz BPF
63Hz BPF
IC1004 SIGNAL SELECTOR
DECODER
SPEANA IN2
SPEANA IN1
IC1005 REMOTE CONTROL RECEIVER
IC1001 SYSTEM CONTROL
M44052
GEQ PRESET LED5
GEQ PRESET LED4
GEQ PRESET LED3
GEQ PRESET LED2
GEQ PRESET LED1
D1055 DISCO
D1054 POPS
D1053 CLASSIC
D1052 JAZZ
D1051 BOM
IC106 (2/4)
IC106 (3/4)
D1058 DBFB
D1059 S-SUR
KEY INPUT
S1001, 1002 A1009-1022 S1501-1510 FUNCTION SWITCH
IC1002 EEPROM
FL1001 FLUORESCENT INDICATOR TUBE
IC1006 LCD DRIVER
IC1007 LCD DRIVER
IC902 5V REG
Q911 CD SWITCH
Q901 POWER SWITCH
IC106 (4/4)
TO CD SECTION
FE1 (FM FRONT END)
Q4
IC302 INPUT SELECTOR
DECODER
Q301
Q302
IC232 MIX AMP
DOLBY/PASS SELECT Q409, 410
Q101 AMP
LPF81
Q103 F MUTE
IC401 DECK CONTROL
A DECK
B DECK
IC81A ROTATION DET
IC81B ROTATION DET
IC402 (1/2) REEL MOTOR DRIVE
M101A REEL MOTOR
M101B REEL MOTOR
Q401 CAPSTAN MOTOR +5V SW
Q402 CAPSTAN MOTOR +5V SW
Q404 SWITCH
Q71A SPEED CONTROL
RV71A NORMAL SPEED
RV72A HIGH SPEED
M102A CAPSTAN MOTOR
Q411 SWITCH
Q71B SPEED CONTROL
RV71B NORMAL SPEED
RV72B HIGH SPEED
M102B CAPSTAN MOTOR
IC404 (1/4) LED DRIVE
IC404 (2/4) LED DRIVE
IC404 (3/4) LED DRIVE
IC404 (4/4) LED DRIVE
Q411 LED CONTROL
D1503 HIGH SPEED
D1504 CD SYNC
Q408, 415 SWITCH
Q1051 AU BUS SWITCH
Q414 AUB SWITCH
IC106 (1/4)
Q1001, 1002 RESET
CF1001 8.38MHz (MAIN CLOCK)
X1002 32.768KHz (SUB CLOCK)
Q9001, 9002 POWER IN DETECT
Q9003 SWITCH
IC9001 RESET
X401 4MHz
IC405 RESET
S1511-1514 S1516, 1517 S1518-1526 FUNCTION SWITCH
Q906 +5.6V REG
(IC002, 51, 406 IC1001, 9001) +5.6V
(IC81, 401, 404) +5V
Q921
Q901, 902 +12V RECT
Q905, 907 +7.5V REG
Q903 +12V REG
Q904 -7.5V REG
Q923, 924 -12V RECT
IC901 +12V/-7.5V REG CONTROL
(IC801, 851) +B -B
Q810 RECT
(IC31 IC003, 004 IC102-205 IC231, 232, 234, 251 IC302, 402, 403 IC501, 602)
T101
F801
AC IN
AC3V (FL1001)
AC40V
AC9V

• IC BLOCK DIAGRAM

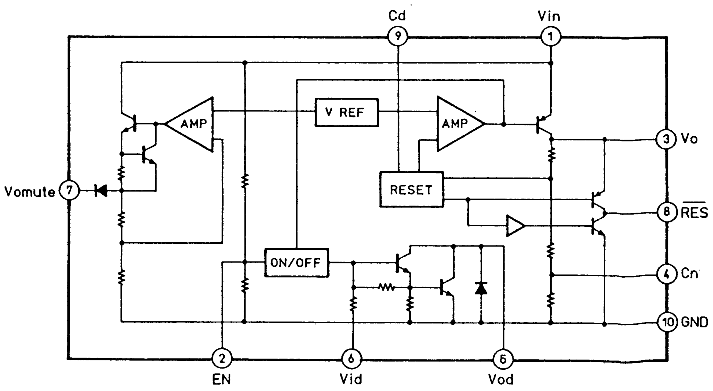
MAIN BOARD IC51 LC7218


24
23
22
21
20
19
18
17
16
15
14
13
1/2
PHASE DETECTOR CHARGE PUMP
SWALLOW COUNTER 1/16, 1/17 BIT
12 BIT PROGRAMMABLE DIVIDER
SHIFT REGISTER LATCH
UNIVERSAL COUNTER
REF DIVIDER
1
2
3
4
5
6
7
8
9
10
11
12

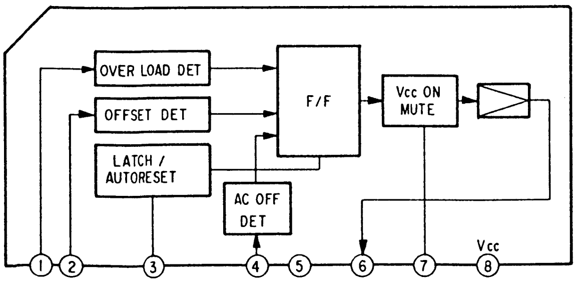
MAIN BOARD IC234 LC7522K


1
2
3
4
5
6
7
8
9
10
11
12
13
14
VDD
IN1
IN2
f7
f6
f5
f4
f3
f2
f1
TEST2
TEST1
S
VEE
RESISTOR NETWORK ANALOG SW
SHIFT RESISTOR
CONTROL
LATCH
RESISTOR NETWORK ANALOG SW
N.C
IN1
IN2
f7
f6
f5
f4
f3
f2
f1
Vss
CLK
DI
Vcc
28
27
26
25
24
23
22
21
20
19
18
17
16
15

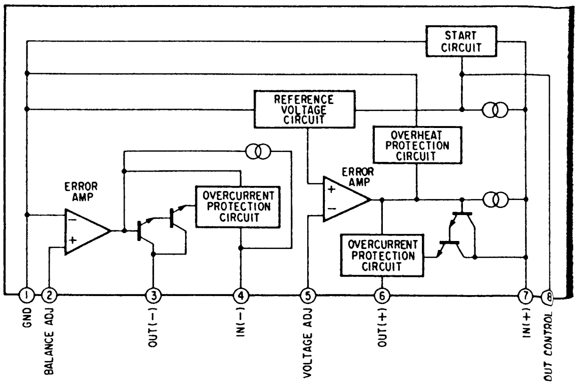
MAIN BOARD IC902 LA5601


Cd
Vin
9
1
AMP
V REF
AMP
3 Vo
Vomute 7
RESET
8 RES
ON/OFF
4 Cn
10 GND
2
6
5
EN
Vid
Vod

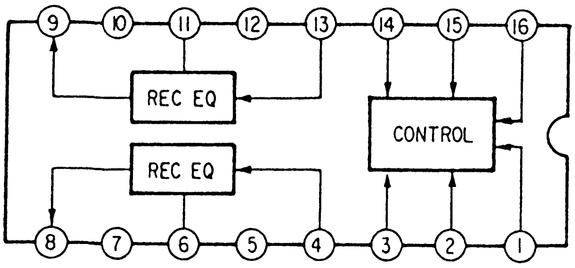
POWER BOARD IC851 uPC1237HA


OVER LOAD DET
OFFSET DET
LATCH / AUTORESET
F/F
Vcc ON MUTE
AC OFF DET
Vcc
1
2
3
4
5
6
7
8

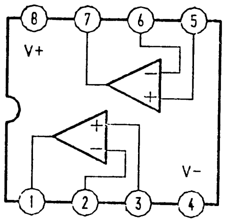
POWER BOARD IC901 M5230L-A


START CIRCUIT
REFERENCE VOLTAGE CIRCUIT
OVERHEAT PROTECTION CIRCUIT
ERROR AMP
ERROR AMP
OVERCURRENT PROTECTION CIRCUIT
OVERCURRENT PROTECTION CIRCUIT
1
2
3
4
5
6
7
8
GND
BALANCE ADJ
OUT(−)
IN(−)
VOLTAGE ADJ
OUT(+)
IN(+)
OUT CONTROL

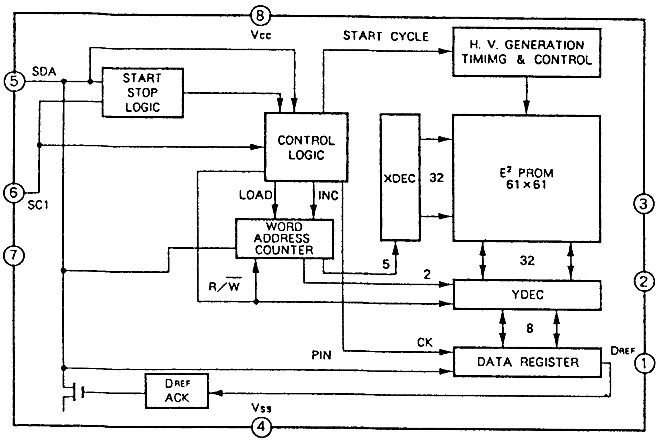
TC BOARD IC205 CXA1578M


9
10
11
12
13
14
15
16
REC EQ
REC EQ
CONTROL
8
7
6
5
4
3
2
1

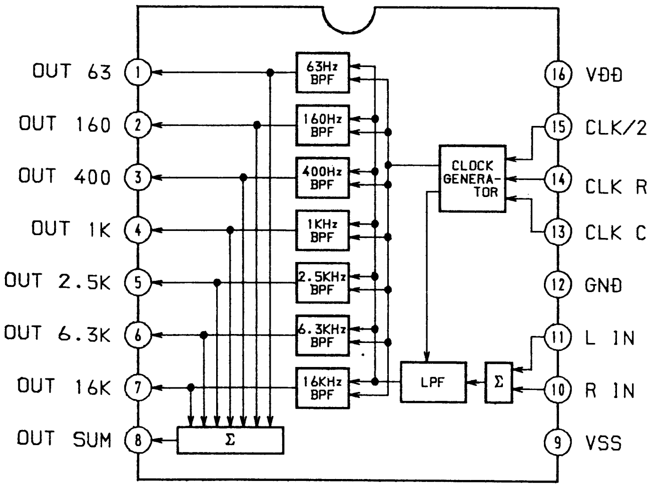
BD BOARD IC302 RC4558PS


8
7
6
5
V+
V-
1
2
3
4

DISPLAY BOARD IC1003 XR1091DCP


8
Vcc
START CYCLE
H. V. GENERATION
TIMIMG & CONTROL
5
SDA
START
STOP
LOGIC
CONTROL
LOGIC
XDEC
32
E² PROM
61×61
6
SC1
LOAD
INC
WORD
ADDRESS
COUNTER
3
7
5
32
2
2
R/W
YDEC
8
CK
PIN
DATA REGISTER
DREF
1
DREF
ACK
Vss
4

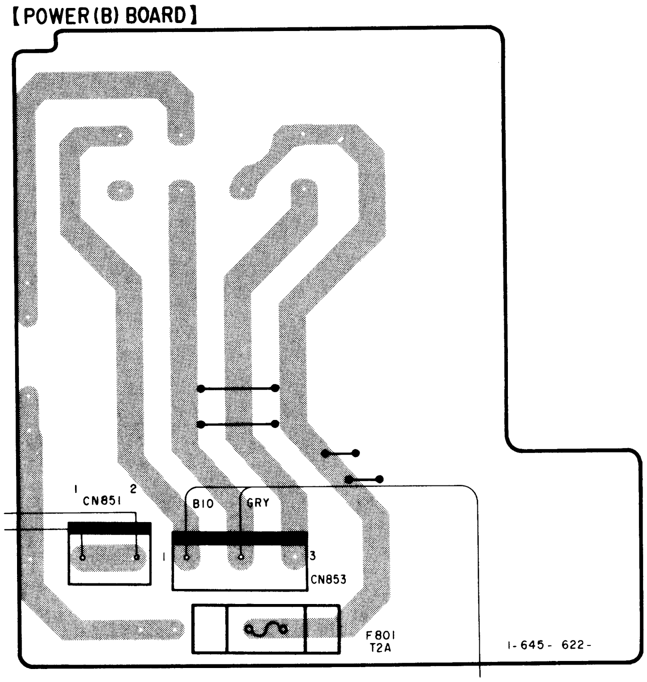
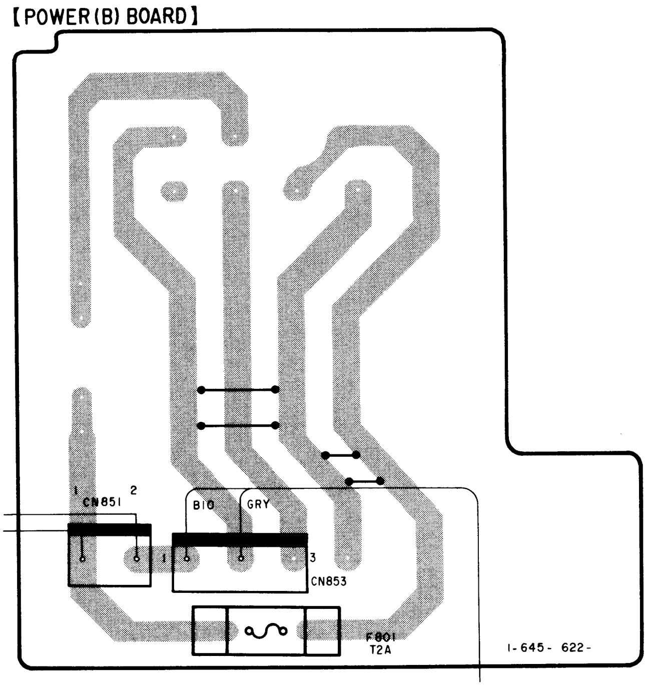
DISPLAY BOARD IC1002 X24C01P


OUT 63
OUT 160
OUT 400
OUT 1K
OUT 2.5K
OUT 6.3K
OUT 16K
OUT SUM
1
2
3
4
5
6
7
8
63Hz BPF
160Hz BPF
400Hz BPF
1KHz BPF
2.5KHz BPF
6.3KHz BPF
16KHz BPF
Σ
CLOCK
GENERA-
TOR
LPF
Σ
16
15
14
13
12
11
10
9
VDD
CLK/2
CLK R
CLK C
GND
L IN
R IN
VSS

CORRECTION

SECTION 7 DIAGRAMS

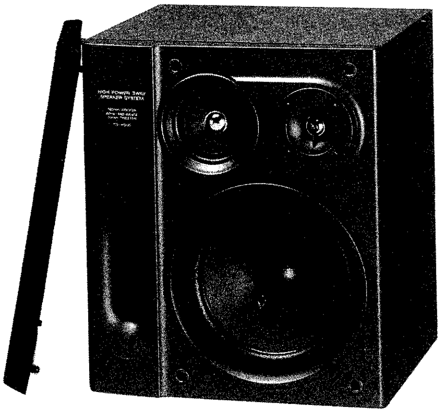
7-3. PRINTED WIRING BOARDS —MAIN Section — : Page 24

Correct	Incorrect
 [POWER (B) BOARD] 1 2 CN851 B10 GRY 1 3 CN853 F801 T2A 1-645- 622-	 [POWER (B) BOARD] 1 2 CN851 B10 GRY 1 3 CN853 F801 T2A 1-645- 622-

SS-H900

SERVICE MANUAL

AEP Model



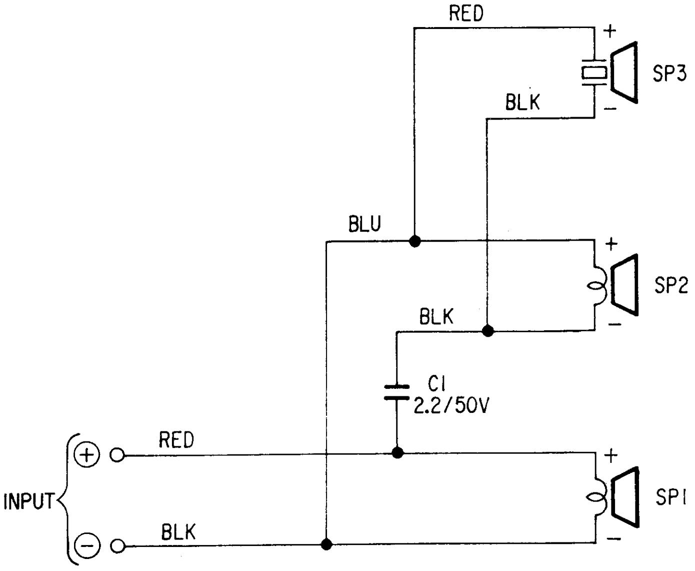
- SS-H900 is the speaker system in MHC-900.

SPECIFICATIONS

Speaker system	3-way
Speaker units	Woofer: 16 cm dia., cone type Tweeter: 6 cm dia., cone type Super tweeter: 2 cm dia., dome type
Enclosure type	Bass reflex
Frequency range	55Hz to 20,000Hz
Sensitivity	89 dB/W/m
Rated impedance	6 ohms
Dimensions	Approx. 245x285x230mm
Weight	Approx. 4.4 kg net per speaker

Design and specifications subject to change without notice.

1. WIRING DIAGRAM



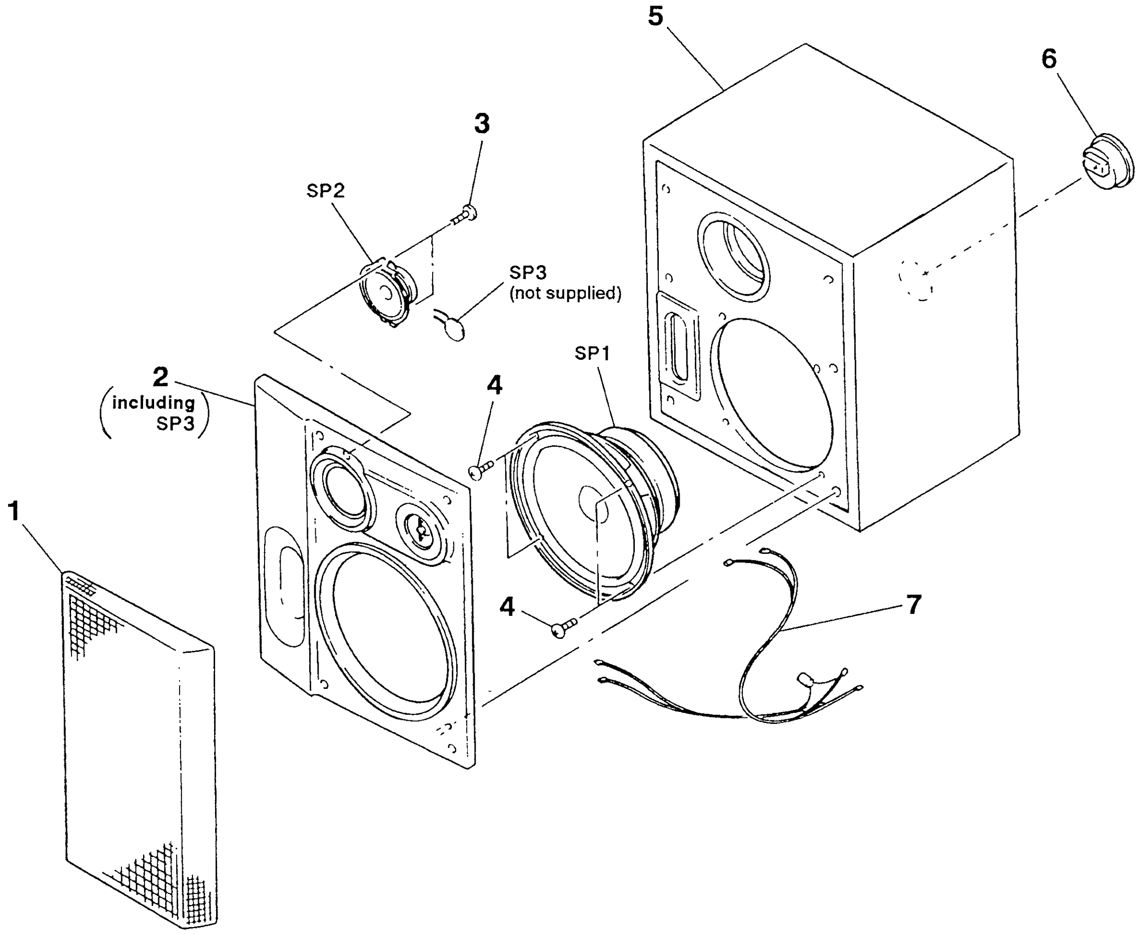
SPEAKER SYSTEM

SONY

2. EXPLODED VIEW AND PARTS LIST

NOTE:

- -XX,-X mean standardized parts, so they may have some difference from the original one.
- Color indication of Appearance Parts.
  Example:
  KNOB,BALANCE (WHITE) . . . (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.



Ref. No.	Part No.	Description	Remark
1	X-4942-350-1	FRAME (R) ASSY, GRILLE	
1	X-4942-713-1	FRAME (L) ASSY, GRILLE	
2	X-4943-277-1	PANEL (R) ASSY, FRONT	
2	X-4943-276-1	PANEL (L) ASSY, FRONT	
3	7-685-659-79	SCREW +BVTP 4X8 TYPE2 SLIT	
4	4-874-614-11	SCREW +BVTP 3.5X14	

Ref. No.	Part No.	Description	Remark
* 5	X-4942-714-1	CABINET (R) ASSY, SPEAKER	(AEP)
* 5	X-4942-715-1	CABINET (L) ASSY, SPEAKER	(AEP)
* 5	X-4943-156-1	CABINET (R) ASSY, SPEAKER	(Germany)
* 5	X-4943-158-1	CABINET (L) ASSY, SPEAKER	(Germany)
6	1-537-332-11	TERMINAL BOARD	
7	1-696-553-12	CORD, CONNECTION	
SP1	1-544-769-11	SPEAKER (16CM)	
SP2	1-544-770-11	SPEAKER (6CM)	

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